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FITCHBURG STATE COLLEGE

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"FITCHBURG STATE
COLLEGIANA/ARCHIVES
COLLECTION"

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Fitchburg State College

Established 1894

Commonwealth of Massachusetts

ACCREDITED BY

National Council for Accreditation
of Teacher Education

The Nursing Department
Baccalaureate and Higher Degree Program
accredited by the National League for Nursing

MEMBER OF

The Eastern States Association of Professional Schools for Teachers
The American Association of Colleges for Teacher Education
Massachusetts Council on Teacher Education
Association of Teacher Education Institutions
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Division of State Colleges

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ADMINISTRATION

James J. Hammond, Ed.M.	President
George H. Merriam, Ph.D.	Academic Dean
John J. Boursy, B.S.	Assistant to the President
Lawrence Quigley, Ph.D.	Executive Assistant to the President
Joseph Angelini, C.A.G.S.	Chairman, Mathematics Department
Duane Armstrong, M. in. Adm.	Financial Aid Officer
Thomas Battinelli, C.A.G.S.	Chairman, Physical Education Department
Harry Crowley, Ed.D.	Chairman, Behavioral Science Department
Dayton N. Dennett, Ph.D.	Chairman, English Department
Edward T. Donnelly, Ed.D.	Chairman, Industrial Arts Department
Adele M. Driscoll, Ed.D.	Coordinator of Student Teaching; Chairman, Education Department
Albert A. Dunlap, Ph.D.	Chairman, Biology Department
Joseph F. Durant, Ed.D.	Dean of Students
William H. Fitzgibbon, M.S.	Dean of Men; Science
William J. Goldman, Ed.D.	Chairman, Special Education Department
Robert W. Greene, Ph.D.	Director of Placement; Public Relations
Francis X. Guindon, Ed.D.	Director of Planning and Development
Leonard C. Harlow, Ed.M.	Director of Campus Schools
Lawrence W. Jackson, A.B.	Director of Admissions
Louise Keenan, Ed.D.	Dean of Women
Richard L. Kent, Mus. A.D.	Chairman, Fine Arts Department; Music
Theodore L. Lapierre, M.Ed.	Chairman, Physics Department
Sister Mary Albert Lenaway, O.P., Ph.D.	Director of Laboratory Experiences and serving as Assistant to the Dean
John J. Mazeika, M.Ed.	Registrar
Philip A. McMurray, Ed.D.	Director of Evening College and Summer School
John A. McNaney, Ph.D.	Chairman, Chemistry Department
John F. Nash, Ed.D.	Director of Continuing Studies
Donald H. Norton, Ph.D.	Chairman, History Department
David F. Ryder, M.A.	Coordinator of Instructional Media; Industrial Arts
Katherine Sehl, Ed.D.	Chairman, Nursing Department

FACULTY

Donald M. Adams	M.B. Boston University; Ed.M. Fitchburg State College. Instructor - Music. 1967
Rose Ann Addorisio	B.S.Ed., M.Ed. Fitchburg State College. Instructor - Campus School, Grade 3. 1969
John T. Andrews	B.S.Ed. Fitchburg State College. Instructor - Industrial Arts. 1968
Joseph A. Angelini	A.B. Providence College; Ed.M. Boston College; C.A.G.S. Boston University. Assistant Professor - Mathematics. 1958
Duane Armstrong	B.S. in Nursing Ed. Fitchburg State College; M. in Nursing Adm. Boston University. Financial Aid Officer. 1969
Lawrence J. Arnold	B.A. King's College; M.A. Fordham University; Ph.D. Trinity College, Dublin. Assistant Professor - History. 1968
Elmer J. Arsenault	B.E. Tufts University. M.F.A. Syracuse University. Assistant Professor - Art. 1958
Sharon Ashton	B.S., M.Ed. University of Maine. Instructor - Physical Education. 1969
Bettina Asselta	B.S.Ed., M.Ed. Fitchburg State Teachers College. Instructor - Campus School, Grade 6. 1969
Johanna Baer	B.S. Hunter College; M.A. New York University. Instructor - Campus School, Grade 6. 1969
Kathryn A. Baker	B.S.Ed. Worcester State Teachers College; M.S. Fitchburg State Teachers College. Instructor - Campus School, English, Latin. 1954
James W. Balentine	A.B. Bates College; M.Ed. Boston State College. Assistant Professor - Campus School. 1967
Lillian Bannon	B.S. Nursing Ed. Boston College School of Nursing; M.Ed. Boston College. Assistant Professor - Nursing. 1963
Patricia Barbaresi	B.S.Ed. Fitchburg State Teachers College; M.A. University of Connecticut. Assistant Professor - Campus School, Grade 3. 1965
Thomas Battinelli	A.A., B.S. Boston University; M.Ed. Boston College; C.A.G.S. Boston University. Associate Professor - Physical Education. 1960
Carmelo Bazzano	B.S., M.S. Springfield College. Instructor - Physical Education. 1969
Joan Benevento	B.S. Southern Connecticut State College: M.S. University of Connecticut; C.A.E.S. Boston College. Assistant Professor - Special Education. 1969

Margaret Benton	Diploma, Wheelock School of Elementary Education; B.S. Boston University. Instructor - Campus School, Grade 2. 1968
Alan L. Bernstein	B.A. Hofstra University; M.A. University of New Hampshire. Assistant Professor - Psychology. 1969
Howard J. Besnia	A.B. Clark University; B.F.A., M.F.A. Yale University. Assistant Professor - Industrial Arts. 1960
Hasan Bey	B.S. State Teachers College, Elbasan, Albania; M.S. State Scientific College, Shkoder, Albania; Ph.D. State University, City of Parma, Italy. Associate Professor - Chemistry. 1965
John J. Black	B.A., M.A. Quincy College; M.Ed. Bowling Green University. Assistant Professor - Speech. 1968
Carla Borg	B.A. West Virginia Wesleyan College; M.Ed. Boston State College. Instructor - Special Education. 1969
Colin E. Bourn	A.B. St. Michael's College; M.Ed. Fitchburg State College; M.A. University of Massachusetts. Assistant Professor - English. 1965
William A. Bowers	B.S.Ed. Eastern Michigan University; M.S. Michigan State University. Associate Professor - Physics. 1964
Grainger Browning	A.B. Shaw University; M.A., Ph.D. Boston University. Professor - Sociology. 1966
Pauline Buczynski	B.R.E. Nyack Missionary College; M.S. Willimantic State College; Professional Ed. Diploma, University of Connecticut. Assistant Professor - Campus School, Reading. 1969
John M. Burke	A.B. Boston College; A.M. Fordham University. Assistant Professor - Russian and German. 1969
Marilyn E. Bushnell	B.S. Simmons College; B.D. Andover Newton Theological School; M.S. Boston University. Assistant Professor - Nursing. 1968
Leonard J. Byron	B.A. College of St. Augustin, Paris; B.LL., Ph.D. Laval University. Associate Professor - Psychology. 1969
Helen Carney	B.S.Ed., M.Ed. Fitchburg State Teachers College. Instructor - Campus School, Grade 2. 1955
Joseph E. Carpenter	B.S.Ed. Fitchburg State Teachers College; Ed.M. Worcester State Teachers College; C.A.G.S. University of Connecticut. Associate Professor - Industrial Arts. 1957
George M. Case	B.A. College of Wooster; M.A. University of Massachusetts. Assistant Professor - English. 1964
William Casey	B.S., M.A. Boston College; M.S. Simmons College. Librarian. 1967
John P. Clark	B.A. American International College; M.A. Clark University. Assistant Professor - History. 1962

Robert W. Clark	A.B. Brown University; M.Ed. State College at Bridgewater. M.A. Rutgers University. Assistant Professor - Mathematics. 1968
George F. Condike	A.B. DePauw University; Ph.D. Cornell University. Professor - Chemistry. 1947
Richard F. Condon	B.S.Ed., Ed.M. Fitchburg State Teachers College. Instructor and Acting Junior High School Principal - Mathematics. 1959
Michael J. Conlon	A.B. Holy Cross College; A.M. Boston College. Professor - Philosophy. 1937
Nicholas J. Copoulos	B.S., M.Ed. Boston University. Assistant Professor - Mathematics. 1957
Catherine Cox	B.Ed. University of Minnesota; A.M. Clark University. Assistant Professor - Geography. 1964
Harry L. Crowley	B.S. Bates College; Ed.M., Ed.D. Boston University. Professor and Chairman - Behavioral Science Department. 1956
Lee N. Cunningham	B.S. Springfield College; M.Ed. University of Massachusetts. Instructor - Physical Education. 1967
Marion Cushman	B.S. Ed. Boston University; M.Ed. Harvard University; C.G.S. Columbia Teachers College. Assistant Professor and Acting Principal - Edgerly School, Grade 6. 1950
Frederic Davis	B.S.E.E. University of Connecticut; M.S., Ph.D. University of Massachusetts. Associate Professor - Biology. 1967
William Davis	B.A. St. Francis Xavier University. Instructor - Campus School, English. 1969
Richard DeCesare	B.S. Holy Cross College; M.A., Ph.D. Boston College. Associate Professor - Philosophy. 1962
Dayton N. Dennett	B.A. City College of New York; M.A. Columbia University; Ph.D. Cornell University. Professor and Chairman - English Department. 1952
Harold F. Desmond, Jr.	B.S., M.Ed. Fitchburg State College; C.P.G.S.P. Boston College. Assistant Professor - Campus School, Science. 1967
Edward T. Donnelly	B.S.Ed., Ed.M. Fitchburg State Teachers College; Ed.D. Boston University. Professor and Chairman - Industrial Arts Department. 1951
Theresa A. Downey	B.S., M.S. Boston University. Instructor - Nursing. 1967
Virginia Doyle	B.S.N. Boston College School of Nursing; M.S. Catholic University of America. Instructor - Nursing. 1967
Adele M. Driscoll	B.S.Ed., Ed.M. Fitchburg State Teachers College; Ed.D. Boston University. Coordinator of Student Teaching; Professor and Chairman - Education Department. 1942

Edward F. Driscoll	B.S.Ed., Ed.M. Fitchburg State Teachers College; Ph.D. University of Connecticut. Professor - Industrial Arts. 1956
Rita Driscoll	B.S. Clark University; M.S. Boston University. Instructor - Nursing. 1964
Albert A. Dunlap	A.B. Bates College; M.S., Ph.D. Yale University. Professor and Chairman - Biology. 1967
Joseph F. Durant	A.B., M.A., Ed.D. Boston College. Dean of Students. 1962
Harold J. Enzian	B.S. Oswego State College; M.A. Kent State University; Ph.D. Ohio State University. Associate Professor - Industrial Arts. 1967
Rose Marie A. Esposito	B.S. Beaver College; M.S. Southern Connecticut State College. Instructor - Biology, Medical Technology. 1967
Ernest E. Fandreyer	MA/MSC University of Bonn. Assistant Professor - Mathematics. 1968
Joseph Farias	B.S.Ed., Ed.M. Fitchburg State Teachers College. Assistant Professor - Industrial Arts. 1961
Anthony V. Feroci	B.A. Suffolk University; M.A. Middlebury College. Assistant Professor - Spanish. 1968
Joseph L. Finkel	A.B. University of Massachusetts; A.M. University of Chicago. Assistant Professor - English. 1969
William Fitzgibbon	B.S.Ed., Ed.M. Fitchburg State Teachers College; M.N.S. Worcester Polytechnic Institute. Dean of Men and Associate Professor - Science. 1953
Katherine Flynn	B.S.Ed., Ed.M. Fitchburg State Teachers College. Assistant Professor - Special Education. 1959
Alice M. Foley	B.S. Boston College; M.S. Boston University. Instructor - Nursing. 1965
Helen Foot	A.B. Smith College. Instructor - Campus School, Grade 5. 1966
Norman H. Fredette	B.S. University of Massachusetts; M.Ed. Harvard University. Instructor - Science. 1967
Donald Freeburg	B.S. Pennsylvania State University; M.A. Bowdoin College. Instructor - Mathematics. 1965
Daniel Friedman	A.B. Syracuse University; M.S. Ph.D. New York University. Assistant Professor - Biology. 1969
Robert Fritz	B.F.A. Syracuse University; M.A., Ed.D. Columbia University. Assistant Professor - Biology. 1969
Everett A. Garvin	A.B. Antioch College; M.S. Tulane University; Ph.D. Washington University. Professor - Psychology. 1967
John Gaumond	B.S., M.Ed. Worcester State College; M.A. Syracuse University. Assistant Professor - Campus School, Social Studies. 1969

Paul A. Girling	A.B. Ottawa University; B.D., S.T.M. Andover Newton Theological School; M.A., Ed.D. Colorado State College. Assistant Professor - Psychology. 1968
Francis X. Guindon	A.B. University of Notre Dame; M.Ed. Bridgewater State College; Ed.D. Harvard University. Director of Planning and Development. 1970
William J. Goldman	B.S.Ed. Salem State Teachers College; Ed.M., Ed.D. Boston University. Professor and Chairman - Special Education Department. 1955
JoAnn Granquist	B.S.N.E. University of Pittsburgh; M.S. Boston University. Assistant Professor - Nursing. 1964
Anne Green	A.B. Emmanuel College; M.Ed. Fitchburg State College. Instructor - Campus School, Grade 4. 1964
Robert W. Greene	B.S.Ed. Worcester State Teachers College; M.Ed. Northeastern University; Ph.D. University of Connecticut. Assistant Professor - Director of Placement, Public Relations. 1960
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James J. Hammond	B.S. Fitchburg State Teachers College; M.S. Harvard University. President. 1937
Erling Hanson	B.S.Ed. Fitchburg State Teachers College; C.A.G.S. University of Connecticut. Instructor - Industrial Arts. 1960
Leonard C. Harlow	B.S.Ed., Ed.M. Fitchburg State College. Associate Professor - Education; Director of Campus Schools. 1968
Walter F. Harrod	B.S.Ed., Ed.M. Fitchburg State Teachers College; C.A.G.S. University of Connecticut. Associate Professor - Industrial Arts. 1947
Elizabeth M. Haskins	B.S., M.S. Massachusetts Institute of Technology; M.A. Radcliffe College. Associate Professor - Mathematics. 1947
Vincent L. Hayley	B.A. University of Dubuque; M.A. Teachers College of Columbia University. Instructor - Psychology. 1967
Douglas C. Hebb	A.B. Union College; A.M. University of California (Berkeley). Assistant Professor - History. 1965
E. B. Heylmun	B.S., Ph.D. University of Utah. Associate Professor - Geography. 1969
Leo J. Hines	A.B., M.A. Boston College; Ph.D. University of Wisconsin. Assistant Professor - English. 1969
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Raymond G. Hoops	B.S. Bowling Green State University; M.A. Ohio State University; Sixth Year Certificate, New York University. Assistant Professor - Industrial Arts. 1958
Linda C. Iverson	B.F.A. Ohio Wesleyan University; M.F.A. Syracuse University. Assistant Professor - Art. 1969

Lawrence W. Jackson	A.B. Wittenberg University. Director of Admissions. 1967
Louise Keenan	A.B. Emmanuel College; Ed.M. Harvard University; Ed.D. Boston University. Dean of Women; Psychology. 1968
Barbara Kelley	B.S.Ed. Fitchburg State College; M.S.N. Boston College. Instructor - Nursing. 1969
Margaret Kent	B.S.Ed. Fitchburg State College; Ed.M. Boston University. Instructor - Campus School, Grade 2. 1968
Richard L. Kent	B.M.E. Drake University; M.M., New England Conservatory of Music; Mus. A.D. Boston University. Professor of Music and Chairman - Fine Arts Department. 1947
William R. Keough	A.B. Harvard University; M.A.,M.F.A. Iowa University. Assistant Professor - English. 1969
Bernice M. Krawiec	B.S., M.S. Boston University. Instructor - Nursing. 1965
Jean Kressy	B.S. Columbia University; M.S. University of Massachusetts. Instructor - Nursing. 1969
Louis F. Krodel, Jr.	B.A. Fairfield University; M.S. Springfield College. Assistant Professor - Psychology. 1968
Elizabeth A. Kruczek	B.S. Boston University Sargent College; Certificate, Nature Education Natural History Museum. Instructor - Physical Education. 1966
Richard Kruse	B.A., M.Ed. Boston University. Instructor - Speech. 1967
Agirios Kuliopolis	B.S.Ed., Ed.M. Bridgewater State College. Assistant Professor - Campus School, Mathematics. 1968
Linda J. Kyle	B. of M., M.M. Boston University. Instructor - Music. 1968
Theodore L. Lapierre	B.S.Ed. Plymouth Teachers College; M.Ed. University of New Hampshire. Assistant Professor and Chairman - Physics. 1961
Carleton LaPorte, Jr.	B.A., M.A. Assumption College. B.LL., D.L. Boston University. Assistant Professor - History, 1969.
Sister Mary A. Lenaway	O.P., B.S. Siena Heights College; M.A., Ph.D. Catholic University of America. Director of Laboratory Experiences and serving as Associate Dean. 1969
A. Orin Leonard	B.A. Wesleyan University; B.S. School of Library Science Columbia University; M.A., Ed.D. Teachers College Columbia University. Associate Director of Continuing Studies and Associate Professor - Psychology. 1952
Karl R. Lindquist	B.A., M.Ed. University of Maine; M.S. Worcester Polytechnic Institute. Assistant Professor - Physical Science. 1963

Louis Lorenzen	B.S. Bowling Green State University; M.Ed. Bridgewater State College. Assistant Professor - Campus School, Art. 1965
Bernice C. Lothrop	B.S. Simmons College; A.M. Columbia University Teachers College. Instructor - Home Economics. 1965
Doris Lystila	B.S.Ed., M.Ed. Fitchburg State Teachers College. Instructor - Campus School, Grade 4. 1959
Ruth M. Mahoney	B.S.Ed. Fitchburg State Teachers College. Instructor - Campus School, Physical Education. 1969
Richard Maki	B.S. Fitchburg State College; M.Ed. University of Florida. Instructor - Campus School, Science. 1969
Elizabeth Maney	B.S.Ed. Boston University; M.Ed. Fitchburg State College. Instructor - Campus School, Grade 1. 1958
Frances Marshall	B.S. Simmons College. Instructor - Campus Scchool, Home Economics. 1964
Anne May	B.S.Ed. Fitchburg State College; Ed.M., C.A.G.S. Boston College; Ed.D. Boston College. Associate Professor - Special Education. 1956
John J. Mazeika	B.S. Holy Cross College; M.Ed. Boston College. Registrar. 1966
Marie McAllister	A.B. Good Counsel College; M.A. Brown University. Instructor - English. 1969
Muriel G. McAvoy	B.A. Radcliffe College; A.M., Ph.D. Boston University. Associate Professor - History. 1965
Robert McDermott	B.S.Ed., M.Ed. Fitchburg State Teachers College. Instructor - Campus School, Grade 4. 1960
Margaret McDowell	B.S.Ed., M.Ed. Fitchburg State Teachers College. Instructor - Campus School, Grade 5. 1950
John McGrail, Jr.	A.B. Holy Cross College; A.M. Boston College. Instructor - English. 1963
Philip A. McMurray	A.B. Manhattan College; Ed.M. Fitchburg State Teachers College. Associate Professor and Director - Evening College and Summer School. 1947
John A. McNaney	B.S.Ed., Ed.M. State Teachers College at Fitchburg; Ph.D. University of the Pacific. Professor and Chairman - Chemistry Department. 1958
Frances McSherry	A.B. Clark University; M.A.T. Assumption College. Instructor - Geography. 1968
George H. Merriam	A.B. Clark University; A.M. Brown University; Ph.D. Clark University. Academic Dean. 1965
Pasquale Micciche	B.S., A.B., M.Ed. Boston College; M.A. University of Minnesota. Assistant Professor - History. 1969

Frederick R. Miller	B.S.Ed., Ed.M. Fitchburg State Teachers College; C.A.E.S. University of Connecticut. Assistant Professor - Industrial Arts. 1966
M. Irene Miranda	B.S.Ed. Bridgewater State College; M.A. University of Massachusetts. Assistant Professor - English. 1965
L. Doris Moquin	B.S.Ed. Salem State Teachers College; M.Ed., Ed.D. Boston University. Associate Professor - Elementary Education. 1966
John F. Nash	A.B., M.S. Boston College; Ed.M. Boston University; Ed.D. Syracuse University. Professor - Director of Continuing Studies. 1958
Donald H. Norton	B.A., M.A. University of Connecticut; Ph.D. Clark University. Professor and Chairman - History Department. 1969
Katherine E. O'Connor	B.S.Ed. Fitchburg State Teachers College; M.S. Boston College. Associate Professor - Nursing. 1962
M. Elizabeth O'Connor	B.S.Ed., M.Ed. Fitchburg State Teachers College. Assistant Professor, Principal - Dillon School, Grade 1. 1948
Alice T. O'Malley	B.A. Anna Maria College; M.A., Ph.D. Clark University. Associate Professor - Biology. 1965
Peter Osterroth	B.A. Clark University; M.A. Middlebury College. Assistant Professor - Geography and German. 1968
Mary O'Sullivan	B.S.Ed. State Teachers College at Fitchburg; M.S.N. Boston College. Instructor - Nursing. 1968
Erwin Pally	B.A., A.M. University of Massachusetts; A.M. Harvard University. Assistant Professor - English. 1966
Irene Passios	B.S.Ed., M.Ed. Fitchburg State Teachers College. Instructor - Campus School, Grade 3. 1954
Frank C. Patterson	B.A. Trenton State College; M.M. Temple University. Instructor - Music. 1968
Ernest Pike	B.S., M.Ed. Fitchburg State College. Assistant Professor - Campus School, Industrial Arts. 1969
Pierre L. Pinet	B.A. University of New Hampshire; M.A. University of Pennsylvania. Associate Professor - French. 1961
Francis P. Powers	A.B. Maryknoll Seminary; M.Ed., Ed.D. Boston College. Associate Professor - Secondary Education. 1964
Ellanor H. Pruitt	B.A., M.A. Emory University. Instructor - Speech and French. 1968
Lawrence Quigley	B.A. Iona College; M.A., Ph.D. Fordham University. Executive Assistant to the President and Professor - English. 1968
Mary Fae Rengo	B.S. Michigan State University. Assistant Professor - Biology. 1968

J. Walter Richard	B.S.Ed. Fitchburg State Teachers College; M.S. University of Massachusetts. Associate Professor - Secondary Education. 1961
Helene Riley	B.S.P.A. Boston University; M.Ed. Fitchburg State College. Instructor - Campus School, Grade 1. 1964
Lawrence J. Risman	B.S. Massachusetts Institute of Technology; M.A. Harvard University. Instructor - Mathematics. 1968
Elizabeth Ross	A.B. Mount St. Mary College; M.Ed. Boston University. Assistant Professor - Education. 1969
David F. Ryder	B.S.Ed. Fitchburg State Teachers College; M.A. University of Maryland. Assistant Professor and Coordinator of Instructional Media - Industrial Arts. 1963
Florence Scarpaci	B.S., M.Ed. Worcester State Teachers College. Assistant Professor - Art. 1966
Donald J. Schmidt	B.A., M.A. State College of Iowa; Ph.D. University of Iowa. Associate Professor - Biology. 1967
Katherine Sehl	B.S. De Paul University; M.S. University of Chicago; Ed.D. Teachers College Columbia University. Professor and Chairman - Nursing Department. 1962
Harry Semerjian	B.M. Boston University College of Music; M.A. Boston University. Assistant Professor - Music. 1960
David Settele	B.S., M.Ed. Boston University. Instructor - Physical Education. 1966
Robert Shaughnessy	B.S.Ed., Ed.M. Fitchburg State Teachers College; M.N.S. Worcester Polytechnic Institute. Assistant Professor - Physics. 1966
Louis P. Shepherd	B.S.Ed. Kansas State Teachers College of Emporia; A.M. Columbia University. Associate Professor - English. 1952
George Steffanides	B.S. University of Massachusetts; A.M., Ed.M. Harvard University. Associate Professor - Biology. 1960
Mark Stephanidis	B.A. University of Michigan; M.A. University of California. Assistant Professor - English. 1969
Robert S. Tapply	B.S.Ed., Ed.M. Fitchburg State Teachers College. Assistant Professor - English. 1966
Lillian Tater	B.S.Ed. Fitchburg State Teachers College; Ed.M. Harvard University. Assistant Professor - English. 1943
Margaret Taylor	B.S.N. New York University; M.S.N. Boston University. Instructor - Nursing. 1966
Rowena Taylor	B.S.Ed. Fitchburg State Teachers College; M.A. Assumption College; M.S.N. Boston College. Assistant Professor - Nursing. 1968
Edmund B. Thomas	B.S. John Carroll University; M.A. Kent State University. Assistant Professor - History. 1968
Rene J. Thomas	B.S.Ed., Ed.M. Fitchburg State Teachers College. Assistant Professor - Industrial Arts. 1957

Esmail Valanejad	B.S. University of Birmingham, England. Assistant Professor - Mathematics. 1968
Michael Vignale	A.B., Ph.D. Boston University. Associate Professor - Chemistry. 1966
Robert W. Welch	B.S., M.S. Emerson College. Instructor - Speech. 1968
Frank Wolf	B.S., M.A., Ed.D. New York University. Professor - Biology. 1957
Daniel Yenkevich	B.A. University of Scranton; M.A. Niagara University. Instructor - History. 1966
Allen W. Zalk	A.B., Ed.M. Boston University; Ed. D. Yeshiva University. Assistant Professor - Special Education. 1969
Robert Zottoli	B.A. Bowdoin College; M.S., Ph.D. University of New Hampshire. Associate Professor - Biology. 1965

CAMPUS SCHOOLS

DILLON

M. Elizabeth O'Connor		W. Joan Holy
Bettina Asselta		Margaret Kent
Pauline Buczynski	Margaret McDowell	Doris Lystila

EDGERLY

Marion Cushman		Anne Green
Rose Ann Addorisio		Essie Mae Jackson
Johanna Baer		Elizabeth Maney
Margaret Benton		Robert McDermott
Helen Carney		Irene Passios
Helen Foot	Mildred L. Vinskey	Helene Riley

JUNIOR HIGH SCHOOL

Richard F. Condon		Carleton H. LaPorte, Jr.
Kathryn A. Baker		Louis Lorenzen
James W. Balentine		Ruth M. Mahoney
William Davis		Richard Maki
Harold F. Desmond		Frances McSherry
John Gaumond	Agirios Kuliopolis	Frances Marshall

MEDICAL OFFICERS

Donald Paiewonsky, M.D., Medical	College Physician
Quintino Rollo, M.D., Surgical	College Physician
Doris M. Keefe, R.N.	Nurse
Margaret M. Peterson, R.N.	Nurse

GENERAL PERSONNEL SUPERVISORS

Carl Beauchamp	Principal Computer Programmer
Albina Davis	Supervising Housekeeper
Paul Dupont	Chief Engineer
Arthur Gagnon	Head Janitor
Daniel F. O'Connor	Head Groundsman
Claire G. Lavoie	Head Clerk
Ellen Matson, B.S., M.Ed.	Dietitian

FITCHBURG STATE COLLEGE

Fitchburg State College was established as a normal school under Chapter 457, Acts of 1894 of the General Laws of the Commonwealth of Massachusetts. It became a State Teachers College in 1933 and a State College in 1962. The College now offers the degrees of Bachelor of Arts, Bachelor of Science in Education, Nursing and Medical Technology and the degree of Master of Education. Through the Continuing Studies Division the Master of Education Degree is granted, as is the Bachelor of Science in Industrial Science.

The College is located on the north side of the City of Fitchburg, forty-five miles west of Boston, and is easily reached by car or bus from all parts of Masachusetts.

The campus consists of academic buildings and laboratories, a library and administration center, four dormitories, a dining hall, a gymnasium and two laboratory schools. Newest buildings include an eleven-story dormitory for women, and a large auditorium-theater.

A short distance north of the main campus is a thirty-four acre athletic and recreational area. Under construction is a new laboratory school complex, comprised of a modern elementary and junior high school which will retain and expand Fitchburg's outstanding feature of a laboratory school system for children in grades one through nine. The Fitchburg State College Junior High School is the only training school of its type in Massachusetts.

The Biology Department maintains a field station on the property of 4-H Camp Middlesex in Ashby, Massachusetts. This facility serves as a focal point for course work and research in field biology and conservation.

The College Library, located on two floors of the Administration Building, at present houses about 60,000 volumes, subscribes to nearly 600 periodicals, and has an extensive collection of musical and spoken word recordings. The Library also includes a basic reference collection of children's literature, and special emphasis is placed on books for students in the fields of education, nursing, guidance, and retarded children.

Over 2000 students are currently enrolled at the College with an additional 1200 part-time students in the evening school and graduate division.

The curricula available to students include work in Elementary, Junior High and Secondary Education, Industrial Arts, Special Education for Teachers of the Mentally Retarded, Nursing and Medical Technology; and Bachelor of Arts program in Biology, Chemistry, English, History and Physics. The Industrial Arts program is one of the oldest in the nation and the leader in New England. While increasingly more students are taking their degree in Arts and Science, at present about 75% of the graduates of Fitchburg State College enter teaching.

OBJECTIVES

The objectives of Fitchburg State College are:

To provide opportunity for the fullest development of the powers with which man is endowed toward the goal of self-realization.

To foster understanding and appreciation of and skill in the several modes of human cognition.

To provide opportunity for the individual to explore himself, the cosmos, and the culture in terms of his interests, capacities, and aptitudes.

To enable the individual to develop his own spiritual values, through the exploitation of the resources of the academic disciplines, and through the encouragement of contacts with spiritual institutions, within the limits of our competence and mandate.

To foster freedom of belief as a means to self-realization.

To foster understanding and appreciation of, and growth toward, the ideals of excellence and creativity in all areas of human activity within the context of democratic choices.

To emphasize the ideal of excellence in scholarship as a prime purpose of this college, and to foster the intellectual competence of the individual through study and designed experience.

To attempt the fullest possible development of understanding and appreciation of human knowledge and experience, through the arts, sciences, and humanities, in their relation to the cosmos and the culture as means to self-realization.

To exploit the total resources of the college, academic, administrative, and co-curricular, in order to provide for the acquisition of understanding and appreciation of the ideals of American democracy as the best social means and conditions for self-realization.

To develop loyalty to the ideals of American citizenship within the larger area of supra-national loyalty to all mankind.

To provide for continued growth in awareness and understanding of contemporary issues and crises, and of the necessity for assuming individual and group responsibility toward them.

ADMISSION OF STUDENTS

REQUIREMENTS

Fitchburg State College endeavors to offer admission to those students whose high-school records and backgrounds offer promise of a successful and satisfying college experience. Each applicant is considered individually, and the decisions of the Committee on Admissions are based on many factors. The admissions decisions exclude consideration of an applicant's race, religion or national origin.

Taken into consideration are the high-school record, scores on tests administered by the College Entrance Examination Board, recommendations by the high-school principal or guidance counselor, and the extra-curricular and outside-of-school activities. Strongest consideration is placed on the high-school record and rank in class, as this is generally deemed to be the best predictor of success in college. College Board test scores are considered only as one of several factors, and there is no "cut-off" score used in determining eligibility for admission.

Applications are accepted beginning in October, and in order to be given consideration the application and all supporting credentials should be received no later than March 1.

At present freshmen are admitted to the College only for the fall semester.

APPLICATIONS

It is necessary that applicants to the College comply with all the following requirements in order to be given consideration:

1. Application Form. To be submitted to the Admissions Office as early as possible during the senior year in high school. Applications may be obtained by writing the Colleges Admissions Office or, in many cases, from high-school guidance offices.

2. Submission of a transcript of the complete high-school record through the first marking period of the senior year. This must show a minimum of 16 units, preferably in college preparatory subjects. Included must be 4 units of English, 2 in Mathematics, 1 in Science and 1 in American History. In addition, liberal arts candidates must have 2 units in a foreign language. (All students, before entrance to college, must be graduated from high school or offer equivalent preparation).

3. A recommendation and personality record from the high-school principal or guidance office, giving evidence of academic interest, ability and preparation.

4. Submission of the College Entrance Examination Board Scholastic Aptitude Test (SAT) scores, and the results of three Achievement Tests. One of the Achievement Tests must be in English, and applicants who expect to continue a foreign language in college should take an Achievement Test in that language. Other Achievement Tests

should be taken in the student's major fields of interest. Junior year SAT scores are acceptable, but it is strongly recommended that the senior year examinations also be taken. Please note that it is the applicant's responsibility to arrange for the forwarding of the necessary test scores directly to the College from the Educational Testing Service, in Princeton, New Jersey.

Interviews are not normally required, and are not a part of the selection process. However, applicants who desire to have an interview or to visit the campus are invited to write the Admissions Office for an appointment. Interviews cannot be scheduled on Saturdays or holidays.

Fitchburg State is on a "rolling admissions" policy. Rather than a simultaneous notification of all applicants of their acceptance, the candidates are notified on a continuing basis over a period of several months beginning about February 1.

ADVANCED STANDING

A limited number of students may be admitted to Fitchburg State on transfer from other colleges, and this is normally done only for the fall semester. Only students with satisfactory academic and personal records can be considered. The transfer of students into the Nursing Program is not possible at this time; and transfer into the Industrial Arts Program can be made only in the Summer Session with the student's eligibility to continue thereafter dependent upon both his achievement and the available space in the shop courses.

The following credentials must be submitted by transfer applicants:

1. Application for Admission.
2. Transcript or transcripts of all previous college work, including a statement of honorable dismissal from the college.
3. A catalog with the courses taken clearly marked.
4. Transferees are advised to submit the SAT scores of the College Entrance Examination Board, and a copy of their secondary school record.

Transfer credits will normally be granted for work completed in other accredited colleges (1) which was of "C" grade or better and (2) in courses similar in content to courses offered at Fitchburg. This evaluation is made by the Registrar only after an application has been processed and admissability has been determined.

In accordance with Board of Trustees policy, preference is given to students seeking transfer from a Massachusetts Community College after completion of two years, academic work.

To be given consideration, all applications should be made to the College by May 1.

COLLEGE HOUSING

Residence Hall accommodations are available on campus for both men and women. At present, facilities are limited and preference is given to Freshman applicants. Most rooms are arranged for double occupancy and are furnished with single beds and other equipment. Students for whom dormitory space is not available are permitted to secure their own off-campus housing. Transfer students generally are unable to be considered for Residence Hall accommodations at the present time.

The basic College policy is that students accepted as dormitory residents continue in that capacity during their entire time at the College. Exceptions have been made liberally in recent years because the dormitory accommodations have been severely limited. Anticipated construction of a new women's dormitory during 1969-71 should greatly alleviate this situation, and it is expected that the College policy regarding continuous dormitory residency can be more closely adhered to in the future.

STUDENT COSTS

The following list includes the essential campus expenses (exclusive of such items as clothing, travel, and entertainment) for which a student should budget for an academic year:

Tuition	$200.
Tuition (out-of-state students)	$600.
Room and Board	$540—660.
Student Government Fee	$30.
Athletic Fee	$15.
Books, Supplies, Gym Uniforms	$150.

All fees are subject to adjustment by the Board of Trustees of the State Colleges in keeping with changing costs of operations.

1. Application Fee
   $10.00 (not refundable nor applicable on tuition).

2. Tuition
   A. For residents of Massachusetts: $200.00 per year—payable in two installments of $100.00 at the beginning of each semester.
   B. For non-residents: $600.00 per year—payable in two installments of $300.00 at the beginning of each semester.

3. Registration Fee
   A Registration Fee of $20.00 is required of all new students upon acceptance. It is not refundable, but is credited against the first semester tuition for students enrolling in the College.

4. Student Activity Fee

   All students are required to pay a Student Government Fee of $30.00 per year, and an Athletic Fee of $15.00 per year. The non-refundable charges, payable in September, support the extra-curricular and organizational programs on campus.

5. Room and Board for resident students

   The cost of boarding is the same for everyone but the rooming cost depends upon the hall to which a student is assigned. The maximum charge at present is $660.00 annually, and is payable in equal installments at the beginning of each semester.

   A residence hall deposit of $25.00 is required of all students accepted for rooming in a College dormitory. This payment, not refundable, is credited against the room and board charge.

6. Refunds

   Refunds for students leaving the College within six weeks after the beginning of the semester will be based on a regular, established schedule of refunds.

VETERAN'S EDUCATION

Fitchburg State College is an approved institution for providing education for the returned veteran under Public Laws No. 346, No. 16, and No. 550.

FINANCIAL ASSISTANCE

Every student who attends the College may be said to be a scholarship recipient, as the low tuition charge covers only a fraction of the total educational cost. The Commonwealth of Massachusetts subsidizes a major portion of an individual's true tuition expense.

However, the College participates in several Federal programs designed to provide financial assistance to students. These include:

1. Educational Opportunity Grants — direct federal scholarships based on exceptional financial need and evidence of academic promise.

2. Federal Work / Study Program — campus employment for which students, particularly from low income families, are paid for a specific number of hours of work each week.

3. National Defense Student Loans and Nursing Student Loans -programs of borrowing for students with financial need under which the loans must be repaid with a low interest rate within a 10-year period following college attendance. Under certain conditions a portion of the loan may be cancelled for teaching or nursing service after graduation.

A limited number of Special Education scholarships are available for students planning to teach mentally retarded children. Information on these is available from the offices of the Dean of Women and the Dean of Men.

The College also employs students for work on campus and in the dining hall.

Please note that establishment of need is basic to all financial aid programs at the College. In order to assess such a need as fairly as possible the College participates in the College Scholarship Service, and each applicant for financial aid must file a Parent's Confidential Statement with the CSS prior to April 1 each year. These forms may be obtained from high schools, colleges, or the College Scholarship Service, P.O. Box 176, Princeton, New Jersey 08540.

Information regarding the Massachusetts State Scholarship Program can be obtained from the high schools or the Board of Higher Education Scholarship Office, 182 Tremont Street, Boston. The College does not administer this program.

Additional information regarding financial aid may be obtained by writing the Dean of Women or the Dean of Men.

REQUIREMENTS FOR GRADUATION

1. Successful completion of all required courses and of the total semester hour requirements of the program.
2. A 2 or better cumulative average for the total program.
3. A 2 or better average in the major field.
4. The successful completion of a standard first aid course in all teacher-education curriculua.
5. The completion of a minimum of 30 semester hours at the college.
6. All Teacher Education majors must take the National Teachers Examination before graduation.
7. Students graduating in June must file an application for graduation with the Registrar not later than February 1 of the year of graduation.

REQUIREMENTS FOR STUDENT TEACHING

1. An academic average in college work of at least 2.0.
2. No failures in the major subject area. (Failures should be removed by retaking the given course or a recognized substitute.)
3. Satisfactory completion of all required professional education courses. (Average grade of 2.0 or higher.)
4. Adequate proficiency in both written and spoken English. (Students otherwise ready for student teaching must successfully complete relevant evening or summer courses in English to remove the deficiency.)

WITHDRAWAL FROM CLASS

A student who wishes to drop a course must obtain the permission of the Registrar. Any student who fails to do this will automatically receive a WF for the course.

A student who must lighten his load or drop out of college due to extensive illness or serious accident will receive a W regardless of time of withdrawal.

WITHDRAWAL FROM COLLEGE

A student must report to the Dean of Men, Dean of Women or the Registrar and obtain a withdrawal form. This must be properly signed by all persons through whom he checks out and returned to the Office of the Registrar.

A student who drops out of college without doing this will receive a WF for all of his courses.

PARKING REGULATIONS

Parking facilities at Fitchburg State College are minimal.

Commuting students are required to park on public streets or to obtain identification stickers which allow them to park in student lots on campus on a first-come, first-served basis.

Resident students are not permitted to have vehicles on campus with the exception of seniors, and students whose teaching or nursing assignments require transportation.

Sophomore and junior resident students who use personal cars for transportation to and from home, or for reasons of work or the like, must arrange off-campus storage and file evidence thereof with the Dean of Men.

Freshmen resident students are not allowed to keep vehicles in the area.

OTHER REQUIREMENTS AND REGULATIONS

Other requirements and regulations of this college will be found in the student handbooks.

DEGREE PROGRAMS

The State College at Fitchburg is empowered to grant five degrees: Bachelor of Science in Education, Bachelor of Science in Nursing, Bachelor of Arts, Bachelor of Science in Medical Technology, and Master of Education. Available through the Evening College is the degree of Bachelor of Science in Industrial Science.

Students preparing to be teachers are candidates for the Bachelor of Science in Education. They may major in Elementary Education, Industrial Arts, Special Education, or Secondary Education. Students in Secondary Education also have a subject matter major selected from one of the following fields: Biology, Chemistry, English, Geography, History, Mathematics, or Physics.

Students in all teacher training curricula have a semester of student teaching.

Candidates for the Bachelor of Arts degree may major in Biology, Chemistry, English, History, or Physics.

Students will seek approval of their departmental advisors in planning curricula.

PART-TIME GRADUATE STUDY

The Division of Graduate and Continuing Studies offers courses each semester of the academic year as well as in the summer to enable teachers in service to work for the degree of Master of Education.

Applicants for the Master's Degree program must submit a completed application form, a copy of their undergraduate transcript, and the results of the Graduate Record Examination (aptitude section) given through the Educational Testing Service, Princeton, New Jersey. Inquiries concerning admissions procedures and the Graduate Record Examination may be addressed to the Dean of Graduate Study.

UNDERGRADUATE EVENING COLLEGE

Since 1963 a program leading to the Bachelor of Science degree in Industrial Science has been available to qualified high-school graduates now in business or industry.

The Associate of Science degrees in Electrical and in Manufacturing Technology are also available to those qualified people who aspire to become technicians within their area of Industrial experience.

In cooperation with the day division of the College, the Evening College also offers a series of courses in a sequential development that help part-time students work for degrees in Education or Liberal Arts. These courses are also open to day students. Such students realize that eventually they must transfer into the day division to complete the requirements of their degree. Additional information can be secured by writing the Director of the Evening College.

GENERAL EDUCATION

Students in all curricula must fulfill the following education requirements:

I

English Composition	6 sem. hrs. (or proven proficiency)
Speech	2 sem. hrs. (or proven proficiency)
Health & Fitness	3 semester hours

To meet Massachusetts laws (General Laws of Education, Chapter 3, Section 20) an examination on the federal and state constitution must be taken.

II

The following minimum number of semester hours will be elected in three general education areas:

Mathematics and/or Science	12-16 semester hours
Humanities	15 semester hours
Social Science	15 semester hours

III

Also to be chosen from any general education courses, including Physical Education Activities: 6 - 8 semester hours.

IV.

No courses in the areas designated as general education may be used to meet major requirements beyond introductory level, 3, 6 or 8 semester-hour courses. No student may apply more than 8 semester hours in a general education area toward his major. No more than 8 semester hours in any discipline may be elected to satisfy general education requirements.

BEHAVIORAL SCIENCE SEQUENCE

The following Behavioral Science courses are common to all secondary education majors.

		Sem. Hrs.
B. Sci. 315	Adolescent Psychology	3
B. Sci. 410	Tests and Measurements	3
	Total	6 Sem. Hrs.

FOREIGN LANGUAGE REQUIREMENT FOR BACHELOR OF ARTS DEGREE AND ELEMENTARY EDUCATION SPECIALIZATION

To satisfy the language requirements, students must be proficient at the third year college level if he or she is studying the same foreign language as studied in high school. If a new foreign language is being taken in college, the student must be proficient at the second year college level course.

PROFESSIONAL SEQUENCE FOR ALL SECONDARY EDUCATION MAJORS

		Sem. Hrs.
Ed. 820	Trends in American Education	3
Ed. 800	Principles and Practices in Education	3
Ed. 860	Student Teaching in Secondary Schools	9
	Special Methods in Major Areas	3
	Total	18 Sem. Hrs.
Ed. 870*	Reading in the Secondary School	3 Sem. Hrs.

*Required of English Majors only, who must complete 21 hours in their professional sequence.

SPECIALIZATION FOR ELEMENTARY MAJOR

All Elementary majors must select and complete a specialization from the following areas: Art, Foreign Language, Geography, History, Language Arts, Mathematics, Music, Science, Early Childhood Education, and Behavioral Science. (A specialization in Library Science is also available through the Division of Continuing Studies.) Requirements for these specializations are found either under respective department headings or below.

Art Specialization: Students in the Elementary Curriculum who wish to specialize in Art may do so by electing the following under the guidance of the Art Department.

Art 302, 310, 320, 330, 400 and 810
Either Art 350 or Art 360

Behavioral Science Specialization: Students in the Elementary Curriculum who wish to specialize in Behavioral Science may do so by electing 24 semester hours of Psychology under the guidance of the Behavioral Science Department.

Required Courses:

B. Sci. 100, 305, 310,* 320,* 325, 410
Elect three courses from the following:
B. Sci. 315, 330, 340, 345, 360, 420, 900

*Students with a specialization in Behavioral Science must take either B. Sci. 310, Child Psychology, or B. Sci. 320, Human Growth and Development, but not both.

Foreign Language Specialization: Students in the Elementary Curriculum who wish to specialize in French or Spanish may do so by attaining the minimum proficiency level of Fr. 222 or Fr. 332, or Spa. 222 or Spa. 322 and take either Fr. 880 or Spa. 880

Language Arts and Early Childhood Specialization: Students in the Elementary Curriculum who wish to specialize in Language Art or Early Childhood Education may do so by electing either of the following under the guidance of the Education Department.

1. Language Arts Specialization
   Ed. 310, 320
   Eng. 480
   B. Sci. 420, 430
2. Early Childhood Specialization
   Ed. 300, 330, 340, 350, 480
   Eng. 480

Music Specialization: Students in the Elementary Curriculum who wish to specialize in Music may do so by electing the following under the guidance of the Music Department.

Mus. 110, 210 (or equivalent), 820 or 800, 420, 430, 440, 450
Three semesters of any combination of Music 410 and/or 400
Two Music Electives

Science Specialization Program: Students in the Elementary Curriculum who wish to specialize in Science may do so by electing 15 semester hours of science under the guidance of the Biology or Chemistry or Physics or Science Departments. Those courses may not be used to satisfy General Education requirements.

Elect 15 hours from the following:

Bio. 101, 102, 121, 122, 301, 302, 320, 330, 340, 400, 450
Chem. 131, 132
Phys. 211, 212
Sci. 201, 202, 310, 320
Geog. 310, 440

SPECIFIC DEGREE REQUIREMENTS FOR MAJORS

Total semester-hour requirements for degrees in specific majors vary from department to department.

BACHELOR OF ARTS IN BIOLOGY

Degree Requirements

	Sem. Hrs.
General Education*	59
Biology**	
Bio. 101, 102	6
Bio. 121, 122	7
Bio. 301, 302	6
Biology Electives	12-18
Chemistry***	15-16
Free Electives****	15-21

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 31 semester hours of Biology, 6 hours of which may be satisfied by General Education, is required of all majors.

***Eight semester hours of Chemistry may be satisfied by General Education.

****See Foreign Language Requirements.

BACHELOR OF SCIENCE IN EDUCATION
BIOLOGY MAJOR

Degree Requirements

	Sem. Hrs.
General Education*	59
Biology**	
Bio. 101, 102	6
Bio. 121, 122	7
Bio. 301, 302	6
Biology Electives	12 -18
Behavioral Science Sequence	6
Professional Sequence	18
Chemistry***	15 -16

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 31 semester hours of Biology, 6 hours of which may be satisfied by General Education, is required of all majors.

***Eight semester hours of Chemistry may be satisfied by General Education.

BACHELOR OF ARTS IN CHEMISTRY

Degree Requirements

	Sem. Hrs.
General Education*	59
Chemistry**	
Chem. 111, 112	8
Chem. 140	1
Chem. 311, 312	10
Chem. 331	4
Chem. 332	3
Chem. 341, 342	8
Chem. 350 or 900	3
Physics 301, 308	8
Math. 230, 240	6
Free Electives***	16 -18

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 37 semester hours of Chemistry, 8 hours of which may be satisfied by General Education, is required of all majors.

***See Foreign Language Requirements.

BACHELOR OF SCIENCE IN EDUCATION
CHEMISTRY MAJOR
Degree Requirements

	Sem. Hrs.
General Education*	59
Chemistry**	
Chem. 111, 112	8
Chem. 311, 312	10
Chem. 331	4
Chem. 332	3
Chem. 341	4
Physics 301, 302	8
Math. 230, 240	6
Behavioral Science Sequence	6
Professional Sequence	18
Electives	0 -22

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 29 semester hours of Chemistry, 8 of which may be satisfied by General Education, is required of all majors.

BACHELOR OF SCIENCE IN EDUCATION
ELEMENTARY CURRICULUM
Degree Requirements

	Sem. Hrs.
General Education*	59
Behavioral Science Sequence	
B. Sci. 410	3
B. Sci. 310	3
Professional Sequence	
Ed. (Foundations of Ed.)	3
Art 800	2
Ed. 800	3
Ed. 820	3
Ed. 840	2
Ed. 850	12
I.A. 890	2
Math. 883	3
Mus. 800	2
P.E. 080	0
P.E. 800	1
Sci. 810	3
Ed. 030	0
Electives**	21

*Courses waived by proficiency must be replaced by selection of free electives.

**All elementary majors must choose a specialization. Requirements are listed under the particular discipline.

BACHELOR OF ARTS IN ENGLISH

Degree Requirements

	Sem. Hrs.
General Education*	59
English**	
Eng. 101, 102	6
Eng. 211, 212	6
English Electives	24
Free Electives***	27-29

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 36 semester hours of English, 6 of which are General Education (Eng. 101, 102) and 6 of which may be from General Education is required of all majors.

***See Foreign Language Requirements.

BACHELOR OF SCIENCE IN EDUCATION
ENGLISH MAJOR

Degree Requirements

	Sem. Hrs.
General Education*	59
English**	
Eng. 101, 102	6
Eng. 211, 212	6
English Electives	18
Behavioral Science Sequence	6
Professional Sequence	21
Free Electives	6-18

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 30 semester hours of English, 6 of which are General Education (Eng. 101, 102) and 6 additional, which may be General Education, is required of all majors.

BACHELOR OF SCIENCE IN EDUCATION
GEOGRAPHY MAJOR
Degree Requirements

	Sem. Hrs.
General Education*	59
Geography**	
Geography 100	3
Geography Electives	27
Behavioral Science Sequence	6
Professional Sequence	18
Free Electives	9-12

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 30 semester hours of Geography, 3 of which may be satisfied by General Education, is required of all majors.

GEOGRAPHY SPECIALIZATION

Students in the Elementary Curriculum who wish to specialize in Geography, may do so by electing 15 semester hours of Geography under the guidance of the Geography Department, from the Geography elective offerings. These may not be used to satisfy General Education.

BACHELOR OF ARTS IN HISTORY

Degree Requirements

	Sem. Hrs.
General Education*	59
History**	
History Electives	36
Free Electives***	27-33

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 36 semester hours of History, 6 of which may be satisfied by General Education, is required by all majors.

***See Foreign Language Requirement.

BACHELOR OF SCIENCE IN EDUCATION
HISTORY MAJOR

	Sem. Hrs.
General Education*	59
History**	
History Electives	30
Behavioral Science Sequence	6
Professional Sequence	18
Free Electives	9-15

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 30 semester hours of History, 6 of which may be satisfied by General Education, is required of all majors.

HISTORY SPECIALIZATION

Students in the Elementary Curriculum who wish to specialize in History may do so by electing 15 semester hours of History under the guidance of the History Department, from the History elective offerings. These may not be used to satisfy General Education.

BACHELOR OF SCIENCE IN EDUCATION
INDUSTRIAL ARTS MAJOR

	Sem. Hrs.
General Education*	59
Industrial Arts**	
I.A. 100, 110, 120, 130 140, 150, 160, 170	16
I.A. 210, 220, 230, 240, 250, 260	18
I.A. 300	3
I.A. Electives	9
Behavioral Science Sequence	
B. Sci. 315	3

Professional Sequence
I.A. 700, 800, 850, 870 19
Philosophy 800 3

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 46 semester hours of Industrial Arts is required of all majors.

BACHELOR OF SCIENCE IN EDUCATION
MATHEMATICS MAJOR

	Sem. Hrs.
General Education*	59
Mathematics**	
Math. 110	3
Math. 120	3
Math. 230	3
Math. 240	3
Math 300	3
Math. 310	3
Math. 340	3
Math. 250	3
Math. 260	3
Math.350	3
Math. Elective	3-9
Behavioral Science Sequence	6
Professional Sequence	18
Free Electives	6-12

*Courses waived by proficiency must be made up by selection of free electives.

**A minimum of 33 semester hours of mathematics, 6 hours of which may be satisfied by proficiency or General Education, is required by all majors.

MATHEMATICS SPECIALIZATION PROGRAM

Students in the Elementary Curriculum who wish to specialize in Mathematics can do so by electing 21 semester hours of mathematics under the guidance of the Mathematics Department.

Required Math. 101, 102 — 6 hrs.
Math. 200 — 3 hrs.

Elect four courses from the following:
Math. 210, 250, 350, 400, 420, 430
C. S. 100

BACHELOR OF SCIENCE IN MEDICAL TECHNOLOGY

	Sem. Hrs.
General Education*	59
Biology**	
Bio. 380	3
Biology Electives	10-16
Chemistry**	10-16
Hospital Experience	32
Free Electives	0-12

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 19 semester hours of Biology and 16 semester hours of Chemistry is required. Six to 8 semester hours of each may be from General Education.

BACHELOR OF SCIENCE IN NURSING

Degree Requirements

	Sem. Hrs.
General Education*	59
Nursing**	
Nursing 701, 702	2
711, 712	8
720	3
731, 732	2
800	12
810	12
820	9
830	12
870	2
880	2
890	2
Bio. 111, 112***	6
Bio. 380	3
Chem. 131, 132 ***	6
Psychology 320	3

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 66 semester hours of Nursing is required of all majors.

***Bio. 111, 112; Chem. 131, 132 should be fulfilled by General Education courses.

BACHELOR OF ARTS IN PHYSICS
Degree Requirements

	Sem. Hrs.
General Education*	59
Physics**	
Phys. 301, 302	8
Phys. 310	3
Phys. 320, 330	8
Phys. 351, 352	6
Phys. 360	4
C.S. 100	3
Physics Electives	0-8
Mathematics	
Math. 230, 240, 260***	9
300, 350, 410	9
Electives****	15-29

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 32 semester hours of Physics, 8 of which may be fulfilled by General Education, is required of all majors.

***Math. 230, 240 may be fulfilled under General Education.

****See Language Requirements.

BACHELOR OF SCIENCE IN EDUCATION
PHYSICS MAJOR
Degree Requirements

	Sem. Hrs.
General Education*	59
Physics**	
Phys. 301, 302	8
Phys. 310	3
Phys. 320, 330	8
Physics Electives	9-17
Mathematics***	
Math. 230, 240, 300	9
Behavioral Science Sequence	6
Professional Sequence	18
Electives	0-6

*Courses waived by proficiency must be replaced by selection of free electives.

**A minimum of 28 hours of Physics, 8 of which may be fulfilled by General Education, is required of all majors.

***Math. 230, 240 may be fulfilled under General Education.

BACHELOR OF SCIENCE IN EDUCATION
SPECIAL EDUCATION MAJOR

Degree Requirements

	Sem. Hrs.
General Education*	59
Special Education**	
Sp.Ed. 200, 210, 240	10
Behavioral Science Sequence	
B.Sci. 320, 330, 410, 430**	12
Professional Sequence	
I.A. 880	3
Sp.Ed. 800, 820, 830, 850**	21
Music 810	3
Art 800	2
Ed. 030	0
P.E. 080	0
Free Electives	12

*Courses waived by proficiency must be replaced by selection of free electives.

**Students in the Special Education Curriculum who wish to specialize in the area of the Emotionally Disturbed may do so by making the following substitutions, under the guidance of the Special Education Department:

Replace B. Sci. 320 with B. Sci. 310, 340 and 345

Replace Sp.Ed. 200, 210, 820 and I.A. 880 with Sp. Ed. 620 and 670.

COURSE DESCRIPTIONS AND DEPARTMENTAL REQUIREMENTS

EXPLANATION OF COURSE NUMBERS

010 - 099 Non-credit courses.
100 - 199 First courses in given area of general education series.
200 - 299 Second courses in given area of general education series.
300 - 799 Elective courses.
800 - 899 Professional courses.
900 - 999 Independent study and honor courses.

Arabic numbers at end of course descriptions represent semester hours and clock hours in that order.

Example

Art 101 Survey of Art Forms I **3-3**
The 3-3 represents 3 semester hours, 3 clock hours.

The term **semester hour** is used to designate a class or equivalent laboratory unit meeting once.

ART

Art 101 Survey of Art Forms I 3-3
Significant art forms in Western Civilization from 1800 to the present.

Art 302 Survey of Art Forms II 3-3
Significant art forms in Western Civilization from the earliest times to 1800.

Art 310 Basic Design 3-6
The pictorial elements: line, color, shape and texture as a preparation for the areas of drawing, painting and sculpture. Prerequisite: Art 101.

Art 320 Basic Drawing 3-6
A studio course, emphasis being primarily upon the exploration of line and mass. Prerequisite: Art 310 or permission of the instructor.

Art 330 Studio Problems in Painting and Drawing 3-6
An introduction to the fundamental techniques in pictorial composition with emphasis upon the handling of painting media. Prerequisite: Art 320 or permission of the instructor.

Art 350 American Art 3-3
Architecture, sculpture, painting and the minor arts from Colonial days to the present, with special emphasis upon contemporary art forms.

Art 360 Renaissance Painting 3-3
From 1250 to 1600. Emphasis on standards which dominated to first half of the 20th century. Prerequisite: Art 101.

Art 400 Advanced Studio Problems in Painting and Drawing 3-6
A continuation of Art 330 with a deepening emphasis upon individual problems. (Students in the Art Teaching Specialty Program are advised to take this course after the training period.) Prerequisite: Art 330.

Art 500 Pictorial Design 3-6
Portrait, figure and landscape painting. Emphasis on structural analysis. Painting media further explored. Prerequisite: Art 400.

Art 511 Three-Dimensional Design 3-6
Experimentation with varied three-dimensional or sculpture media; e. g., plaster, found objects, etc.; emphasizing understanding of basic principles of design and form.

Art 512 Studio Problems in Three-Dimensional Design 3-6
A continuation of Art, emphasizing individually selected problems exploring sculpture techniques in various materials.

Art 800 Art in Elementary Education 2-4
Observation and discussion of the philosophy and practice of art education for the elementary grades.

Art 810 Seminar in Art Education **2-2**

Limited to students in the Art Teaching Specialty Program. Professional practices in art education. Laboratory experiences, observations and discussions concerning professional literature. Prerequisite: Art 320.

Art 900 Independent Study in Art 3 hours credit

For selected students, upon approval of both department head and advising instructor.

BEHAVIORAL SCIENCE

B. Sci. 100, General Psychology is prerequisite for all succeeding Behavioral Science courses.

B. Sci. 100 General Psychology **3-3**

The science of human behavior. Scientific method, maturation, motivation, emotions, sensation, perception, learning, personality, adjustment.

B. Sci. 110 Introduction to Sociology **3-3**

Structure and process in the organization of groups, with consideration of development, maintenance and change variables.

B. Sci. 305 Advanced General Psychology **3-3**

Continuation of B. Sci. 100. Includes research techniques, perception, motivation, personality theory, and language and communication.

B. Sci. 310 Child Psychology **3-3**

Emphasis on the theories of development and, on application, in understanding and guiding the development of normal children.

B. Sci. 315 Adolescent Psychology **3-3**

The significance of psychological factors in the adjustment of the adolescent to his peers, family, school and society.

B. Sci. 320 Human Growth and Development **3-3**

Both the physiological and psychological development of the individual from conception to senescence.

B. Sci. 325 Psychology of Learning **3-3**

Nature and fundamental principles of learning. Effective learning procedures and conditions.

B. Sci. 330 Principles of Guidance **3-3**

Introductory course for teachers or persons planning specialization. Nature, scope and purpose of guidance services. Counselling, special methods and materials.

B. Sci. 335 Mental Hygiene **3-3**

Factors governing the adjustment of the individual to his environment mentally, physically, emotionally, socially.

B. Sci. 340 Psychology of Personality 3-3
Dynamic factors in personality formation are followed through approximate sequences of the life periods. Major theories and assessment.

B. Sci. 345 Abnormal Psychology 3-3
Nature of emotional disturbances and presentation of the major neuroses, psychoses and conduct disorders.

B. Sci. 350 Educational Psychology 3-3
Application of psychological principles to the educative process.

B. Sci. 355 Learning Problems in Urban Schools 3-3
Ways schools can bridge the gap between cultural difficulties and school experiences.

B. Sci. 360 Social Psychology 3-3
Psychological constructs and concepts applied to the interaction between human beings.

B. Sci. 370 Community Analysis 3-3
The community as a social system. Field Study: observation and analysis of local communities.

B. Sci. 380 Urban Sociology 3-3
The structure and function of cities in history and modern life.

B. Sci. 410 Tests and Measurements 3-3
Basic statistical concepts and techniques in measurement. Application of teacher-made tests, standardized tests and others.

B. Sci. 420 Psychology of Speech and Communication 3-3
Primarily intended to acquaint students with a broader appreciation of speech, language, and communication.

B. Sci. 430 Introduction to Speech Pathology 3-3
Primarily intended to acquaint students with the profession of speech pathology, speech disorders and treatment of the disorders.

B. Sci. 900 Independent Study 3 credits

BIOLOGY

Bio. 101 and 102 Biology I and II 3-4
A general education course designed to provide an understanding of living things.

Bio. 111 and 112 Anatomy and Physiology 3-4
The structure and physiological mechanisms of the human organism at the cellular, tissue, and organ level.

Bio. 121 General Zoology I 4-6
The fundamental principles underlying animal life. Prerequisite: Bio. 101 and 102 or permission of instructor.

Bio. 122 General Zoology II 3-4
Continuation of Bio. 121.

Bio. 301 Botany of the Non-Vascular Plants 3-4
Emphasis on representative Thallophytes and Bryophytes, their biology and importance to man. Prerequisite: Bio. 101 and 102.

Bio. 302 Botany of the Vascular Plants 3-4
Trachaeophytes or Vascular Plants, their morphology, classification, economic importance and evolutionary development. Prerequisite: Bio. 101 and 102.

Bio. 320 Laboratory Techniques in Biology 3-4
Techniques, procedures, demonstrations, experiments, and other activities performed in biology laboratories. Prerequisite: Bio. 101 and 102.

Bio. 330 Conservation of Natural Resources (second semester) 3-4
The maintenance of environmental quality and productivity. Field and laboratory work provides outdoor-oriented conservation material. Prerequisite: Bio. 101 and 102 or permission of the instructor.

Bio. 340 Field Natural History (first semester) 3-4
Basic ecological principles. Field work and laboratories emphasize local communities and provide practice in the use of taxonomic keys. Prerequisites: Bio. 101 and 102, or permission of the instructor.

Bio. 350 Genetics 3-4
Principles of heredity in animals, plants and microorganisms. Laboratory involves breeding experiments. Prerequisite: Bio. 101 and 102, Chem. 102.

Bio. 360 Plant Physiology 3-4
The function of plant cells, tissues, and other structures. Prerequisite: Chem. 301.

Bio. 370 Anatomy and Physiology 4-6
The structure and function of the human organism.

Bio. 380 Microbiology 3-4
Study of the structure and function of microorganisms with special emphasis on their relationships to man.

Bio. 390 Comparative Chordate Anatomy 3-4
A comparative study of the structure and body systems of chordate. Prerequisite: Bio. 101 and 102.

Bio. 400 Marine Biology 3-3
The physical, chemical, and biological factors in the marine environment. Field trips. Prerequisite: Bio. 101 and 102, or permission of the instructor.

Bio. 420 Ecology 3-4
Emphasis on quantitative study of phenomena such as population relationships, productivity, energetics and community structure. Prerequisite: permission of the instructor.

Bio. 430 Parasitology 3-4
The morphology of representative groups of parasitic protozoa, helminths, and arthropods, and their functional relationships to the animal and human hists. Prerequisite: Bio. 120; upper-class status.

Bio. 440 Cell Structure and Function 3-4

Physiology. Organization, distribution, and function of cellular inclusions. Prerequisite: Bio. 101 and 102 and Chemistry 301.

Bio. 450 Ornithology 3-4

Introduction to avian biology. Prerequisite: Bio. 101 and 102 or permission of the instructor.

Bio. 460 Embryology 3-4

Cellular morphogenesis, metabolism, differentiation. Emphasis on tissue interaction and physiological and biochemical mechanisms. Prerequisite: Bio. 101 and 102.

Bio. 500 History of Biology 3-3

Origins, development and present status of Biology. Two hours lecture and one hour discussion. Prerequisite: Bio. 101 and 102.

Bio. 700 B.S.C.S. Biology 3-4

B.S.C.S. materials used and evaluated. Laboratory course dealing with the basic themes of biological science. Prerequisite: Upperclass status and permission of instructor.

Bio. 880 Biology Methods 3-3

Philosophy and methods of modern science teaching. (Required of all Biology education majors plus 30 semester hours in Biology.)

Bio. 900 Independent Research 3 hours credit

CHEMISTRY

Chem. 111 General Chemistry I 4-5

The fundamental laws and theories of chemistry. Chemical calculations are emphasized.

Chem. 112 General Chemistry II 4-5

Continuation of (and prerequisite:) Chem. 111 or the equivalent.

Chem. 131 Chemistry I 3-4

Fundamentals of chemistry for non-science majors.

Chem. 132 Chemistry II 3-4

Continuation of (and prerequisite:) Chem. 131 or the equivalent.

Chem. 140 Qualitative Analysis 1-2

Includes the separation and identification of inorganic cations and anions, with particular emphasis on the chemical principles involved. Prerequisite: Chem. 111 or the equivalent.

ELECTIVES

Chem. 301 and 302 Organic Chemistry I and II 4-5

The first half of the course deals with the correlation of structure and reactivity, interconversion of functional groups and structure determination. The second semester continues Chem. 301 with increased emphasis on reaction mechanisms. Prerequisite: Successful completion of Chem. 111 and 112 or the equivalent.

Chem. 311 and 312 Organic Chemistry I and II 5-7

Same as Chem. 301 and 302 except that an additional laboratory period is required. Required of all chemistry majors.

Chem. 320 Biochemistry 3-4

Introduction to the chemistry of carbohydrates, fats and proteins. The metabolic processes of living things. Required of Biology majors in sophomore year. Prerequisite: Chem. 301 or the equivalent.

Chem. 331 Quantitative Analysis 4-6

Emphasis on theory and application of Quantitative Analysis. Prerequisite: Chem. 111 and 112 or the equivalent.

Chem. 332 Instrumental Analysis 3-5

Essentially a laboratory course in Instrumental Analysis. Prerequisite: Chem 331 or the equivalent.

Chem. 341 Physical Chemistry I 4-5

The underlying principles of chemistry from a physical chemistry standpoint. Prerequisite: Chem. 331 or the equivalent.

Chem. 342 Physical Chemistry II 4-5

Continuation of (and prerequisite): Chem. 341.

Chem. 350 Advanced Inorganic Chemistry 3-3

Valency theories, acid-base theories, reactions in non-aqueous solvents, complexation and chelation, physical measurements. Prerequisite: Chem. 341 and 342 or the equivalent.

Chem. 360 C.B.A. and CHEM. STUDY Chemistry

The rationale underlying both the theoretical and laboratory presentation in the two programs. Prerequisite: Chem. 341 or the equivalent.

Chem. 900 Independent Study in Chemistry 3-6

Laboratory research under guidance of the Chemistry staff. Prerequisite: Permission of the instructor.

COMPUTER SCIENCE

C.S. 100 Computer Programing 3-3

Computer programing using Fortran and Forgo languages. Mathematics assumed, algebra and trigonometry. May be used for mathematics or physics credit.

C.S. 201 Computer Science I 3-3

Assumes knowledge of Fortran. Methods of numerical integration, differentiation, and interpolation. Prerequisite: Two semesters of calculus.

C.S. 202 Computer Science II 3-3

Solution of simultaneous equations, series approximation, curve fitting, operations with matrices.

EDUCATION

Ed. 030 Handwriting Once a month, no credit

Standard handwriting course required of students in the Elementary and Special Education curricula.

Ed. 300 Early Childhood 3-3

Culture, research, sociology and psychology. A guide for teaching children ages 3-5.

Ed. 310 Improvement of Reading 3-3

Each student is assigned an individual child who has a reading problem. Prerequisite: Ed. 810.

Ed. 320 Language Arts in the Elementary School 3-3

The four aspects of a total program in Language Arts: listening, speaking, writing and creativity. Prerequisite: B. Sci. 310.

Ed. 332 Methods and Materials of Early Childhood Education 3-3

Physical, social, emotional development of children 3-8. Methods and activities; evaluation of teaching techniques. Prerequisite: Ed. 300.

Ed. 760 Instructional Media Techniques 3-3

A basic study of the effective selection, use and evaluation of various types of instructional media for all classroom areas.

Ed. 800 Principles and Practices in Education 3-3

Required of all Education majors. Definitions, and systematic training in the achieving of educational goals. Prerequisite: B. Sci. 310.

Ed. 810 Reading in the Elementary School 3-3

Problems and methods of teaching reading in the primary and elementary grades. Many basic reading series are studied. Prerequisite: B. Sci. 310.

Ed. 820 Trends in American Education 3-3

An historical study with emphasis on current practices and trends at both Elementary and Secondary levels. Required of Secondary Education majors.

Ed. 840 Social Studies in the Elementary School 2-2

Man and his relationship with other men and his environment. Use and interpretation of graphs, charts, cartoons, globes and maps.

Ed. 850 Student Teaching in Elementary Education 12-25

Each student is required to have a full semester of student teaching consisting of two experiences at the elementary education level.

Ed. 860 Student Teaching in the Secondary School 9 credit hours

Students are assigned to a laboratory school for a semester of student teaching.

Ed. 870 Reading in the Secondary School 3-3

Curriculum development, materials and nature of reading. Required of Secondary curriculum English majors. Prerequisite: B. Sci. 315, Ed. 800.

SPECIAL METHODS IN MAJOR AREAS

These courses emphasize curriculum development, materials and any methods that are peculiar to the specific subject-matter major. They will be found numbered 880 under the specific subject headings. (Example: Biology 880. Biology Methods.)

ENGLISH

Eng. 101 English Composition I 3-3

Practice, both oral and written, in expressing ideas with precision, clarity and economy. Critical reading.

Eng. 102 English Composition II 3-3

Essentially a continuation of Eng. 101 but more advanced. Logic, vocabulary of criticism, the research essay. Prerequisite: a passing grade in Eng. 101.

Eng. 201 American Literature I 3-3

Representative American writers from Colonial days through the Civil War.

Eng. 202 American Literature II 3-3

Representative American writers since the Civil War.

Eng. 211 English Literature I 3-3

British writers from the Old English period through the early Romantic writers of the late 18th century.

Eng. 212 English Literature II 3-3

British writers since the Romantic movement.

Eng. 221 World Literature I 3-3

European literary masterpieces from the beginning through the middle of the 17th century.

Eng. 222 World Literature II 3-3

European literary masterpieces from the mid-17th century to the present.

Eng. 300 World Drama 3-3

Significant and representative plays from the beginning to the modern period.

Eng. 310 Modern Drama 3-3

The works of such playwrights as Ibsen, Chekhov, Sartre, Brecht, Ionesco.

Eng. 320 The Middle Ages 3-3

Literary forms that made their first appearance after the emergence of Middle English. Much attention to Chaucer.

Eng. 330 The Early Shakespeare 3-3

Tragedies, comedies and English chronicle histories of Shakespeare's youth.

Eng. 340 The Later Shakespeare 3-3

Mature comedies and tragedies. This course complements the Early Shakespeare but either may be taken independently of the other.

Eng. 350 Elizabethan Literature 3-3

The main characteristics of Renaissance and Elizabethan literature.

Eng. 361 Early Seventeenth Century Literature 3-3

English literature from 1600 through 1660.

Eng. 362 Late Seventeenth Century Literature 3-3
English literature from 1660 through 1700.

Eng. 370 Milton 3-3
The English poems including *Paradise Lost*, and some prose.

Eng. 381 Early Eighteenth Century Literature 3-3
English literature from 1700 through 1745.

Eng. 382 Late Eighteenth Century Literature 3-3
English literature from 1745 through 1800.

Eng. 390 Literature of the Romantic Period 3-3
Wordsworth, Coleridge, Byron, Shelley, Keats. Minor authors such as Lamb and Hazlitt.

Eng. 400 Literature of the Victorian Period 3-3
Prose, poetry and drama are studied for a greater understanding of the aesthetic, spiritual and social development of this period.

Eng. 410 The Novel Before World War I 3-3
Significant novels representing various countries and periods as well as stages in the development of this literary form.

Eng. 420 The Modern Novel 3-3
Modern novels of different nations are studied both aesthetically and as human documents.

Eng. 430 The Short Story 3-3
The episode, tale and novella both as art forms and human documents.

Eng. 440 Modern Poetry 3-3
Representative modern poetry with the emphasis on American and English poets.

Eng. 450 Major American Writers of the Twentieth Century 3-3
The varied creativity of American writers of fiction, drama, poetry, criticism, and the essay since World War I.

Eng. 460 British and American Humor 3-3
Comic writing in the fields of nonsense, fantasy, allegory and satire.

Eng. 470 Twentieth-Century Irish Literature 3-3
Synge, Yeats, Joyce, O'Flaherty, O'Connor and O'Faolain, with some attention to minor figures of the so-called Irish Literary Renaissance.

Eng. 480 Children's Literature 3-3
Criteria for evaluation; story-telling; sources; book clubs; book fairs; school and classroom libraries; related areas.

Eng. 490 Books and Related Materials for Young People 3-3
The outstanding literature, with guides to its selection and use.

Eng. 500 History of Literary Criticism 3-3
Critical theory and practice from Aristotle through the 19th century.

Eng. 510 Modern and Contemporary Criticism 3-3
Varied theories and practice. Complements History of Literary Criticism but either may be taken independently of the other.

Eng. 520 Historical Development of the English Language 3-3
The nature and development of the English Language, and its relation to other languages.

Eng. 530 Advanced Composition 3-3
Conducted as a writer's workshop. Stresses non-fictional prose.

Eng. 540 Creative Writing 3-3
For outstanding students who have completed Eng. 101 and 102. Upon approval of instructor.

Eng. 550 Decadence and Transition 3-3
Victorian literary standards collated with modern trends in poetry, prose, drama.

Eng. 560 The American Novel Since 1945 3-3
A close analysis of seven or eight major novels.

Eng. 570 The Black Author in the Modern World 3-3
An aesthetic and social study of modern Black writings in Africa, Latin America, and especially the United States. Juniors and seniors.

Eng. 580 The Nineteenth-Century English Novel 3-3
Significant novels demostrating the changing cultural milieu and varying approaches of the genre during this period.

Eng. 591 Russian Literature in Translation I 3-3
A treatment of the general principles of the 18th, 19th and 20th century Russian writers.

Eng. 591 Russian Literature in Translation II 3-3
Continuation of Eng. 591.

Eng. 601 The Structure and Nature of Language 3-3
The study of language systems; traditional-structural-transformational-generative views of structure; current theories of acquisition; psycholinquistic and sociolinquistic problems.

Eng. 602 Rhetoric: The Management of Discourse 3-3
The study of kinds of discourse; the roles of speaker-subject-audience; the applications of logic.

Eng. 881 The Teaching of English I 2-2
The methodology of English (lesson planning, selection of materials, curriculum development, review of relevant research).

Eng. 882 The Teaching of English II 1-1
Continuation of (and prerequisite): Eng. 881.

Eng. 900 Independent Study 3-3
For English majors excelling in scholarship, upon approval of both department head and advising instructor.

FOREIGN LANGUAGES

A placement test is given prior to the beginning of the semester and must be taken by students to determine their level of proficiency in a specific language beyond the elementary level.

FRENCH

Fr. 101 French for Beginners 4-5

Correct pronunciation, reading ability, and fundamentals of grammar and syntax. French gradually becomes the working classroom and the laboratory language.

Fr. 102 French for Beginners 4-5

A continuation of French 101.

Fr. 111 French I Intermediate 4-5

Conversation and laboratory practice; readings stressing life, customs, and culture of France. Prerequisite: Two years of high school French or French 101 and 102 and/or satisfactory score on Placement Test.

Fr. 112 French II Intermediate 4-5

A continuation of French 111.

Fr. 221 French Civilization I 3-3

Development of the French nation as revealed in its history, geography and basic institutions through modern literature. Prerequisites: Placement Test or completion of French 112 and/or instructor's permission. (Course conducted in French.)

Fr. 222 French Civilization II 3-3

A continuation of French 221.

Fr. 331 French Literature I 3-3

A survey of the main currents of French literature from the Middle Ages through the 18th century. Prerequisite: Placement Test or completion of French 112 and/or instructor's permission. (Course conducted in French.)

Fr. 332 French Literature II 3-3

A survey of the main currents of French literature of the 19th and 20th centuries. Prerequisite: Placement Test or completion of French 112 and/or instructor's permission. (Course conducted in French.)

Fr. 880 Methods for Teaching French in the Elementary School 3-3

Techniques and materials for use in elementary school. Prerequisite: Minimum of 12 semester hours beyond beginners' level and permission of instructor.

Fr. 900 Advanced French Independent Study 3-3

Prerequisite: Minimum of 12 semester hours, 2 grade-average (in French) and permission of instructor.

GERMAN

Gr. 101 German for Beginners 4-5

German gradually becomes the working classroom and laboratory language.

Gr. 102 German for Beginners 4-5
Continuation of German 101.

Gr. 111 Intermediate German 4-5
Readings stress life, customs, and culture of Germany. Prerequisites: Two years of high school German or German 102 and/or satisfactory score on Placement Test.

Gr. 112 Intermediate German 4-5
Continuation of German 111.

Gr. 221 German Civilization 3-3
History, geography, literature, fine arts from Holy Roman Empire through today. Given in German. Prerequisite: Gr. 111, 112; and/or placement test; and/or permission of instructor.

Gr. 222 German Civilization 3-3
Continuation of Gr. 221

Gr. 331 German Literature through Goethe 3-3
Representative works up to and including Goethe. Conducted in German. Prerequisite: Placement Test or completion of German 112 and/or instructor's permission.

Gr. 332 German Literature since Goethe 3-3
Continuation of German 331.

RUSSIAN

Ru. 101 Russian for Beginners 4-5
Aural-oral approach to pronunciation, reading, fundamentals of grammar and syntax. Russian gradually becomes working classroom and laboratory language.

Ru. 102 Russian for Beginners 4-5
Continuation of Ru. 101.

Ru. 111 Russian I Intermediate 4-5
Remedial pronunciation, grammar variety, conversation and laboratory practice. Readings stress U.S.S.R. life, customs, culture. Russian is the working language.

Ru. 112 Russian II Intermediate 4-5
Continuation of Ru. 111.

SPANISH

Spa. 101 Spanish for Beginners 4-5
Spanish gradually becomes the working classroom and laboratory language.

Spa. 102 Spanish for Beginners 4-5
A continuation of Spanish 101.

Spa. 111 Spanish I Intermediate 4-5
Readings stress life, customs, and culture of Spain and Spanish America. Prerequisite: Two years of high school Spanish (or Spanish 101 and 102) and/or satisfactory score on Placement Test.

Spa. 112 Spanish II Intermediate 4-5
A continuation of Spanish 111.

Spa. 221 Spanish Civilization I 3-3
Spanish culture as evidenced in Spain and Spanish America through modern representative literature; conducted in Spanish. Prerequisite: Placement Test or completion of Spanish 111 and 112 and/or instructor's permission.

Spa. 222 Spanish Civilization II 3-3
Continuation of Spanish 221.

Spa. 331 Spanish Literature I 3-3
Conducted in Spanish. A survey of Spanish and Spanish Literature. Prerequisite: Placement Test or completion of Spanish 111 and 112 and/or instructor's permission.

Spa. 332 Spanish Literature II 3-3
A continuation of Spanish 331.

Spa. 880 Methods for Teaching Spanish in the Elementary School 3-3
Techniques and materials for use in elementary school. Prerequisite: Minimum of 12 semester hours beyond beginners' level and permission of the instructor; 2 grade average in Spanish.

GEOGRAPHY

Geog. 100 is prerequisite for all succeeding Geography courses.

Geog. 100 Introduction to Geography 3-3
The interrelationships between the physical and cultural elements of man's environment.

Geog. 120 Geology 3-4
An introductory survey of the basic elements of physical and historical geology. Laboratory required.

Geog. 200 Geography of the United States and Canada 3-3
The regions. Influence of topography, climate, soils, vegetation, transportion, natural resources on occupations and cultural development of each region.

ELECTIVES

Geog. 300 Economic Geography 3-3
Basic geographic factors involved in the production, distribution, and consumption of the major commodities of the world.

Geog. 310 Meteorology 3-3
Principles underlying atmospheric phenomena, weather analysis and forecasting, application of weather data to problems of agriculture, forestry, transportation, health.

Geog. 320 Climatology 3-3
Study of the climate regions. Latitude, pressure cells, mountain barriers, water bodies, ocean currents, winds in the development of each climate.

Geog. 330 Geography of Latin America 3-3
The countries and colonies of Latin America; historical background, political status, physical and climate regions, agricultural and economic position, international relations.

Geog. 340 Geography of Europe 3-3
A regional analysis of the countries of Europe based on the geographic elements influencing their evolution and international relationships.

Geog. 350 Geographic Influences in American History 3-3
Natural elements are analyzed to show their influence on the exploration, colonization, and expansion of the United States.

Geog. 360 Political Geography 3-3
Dependent and independent political units (colonies, protectorates, trust territories, commonwealths, countries), boundary disputes, strategic areas, buffer zones, and international organizations.

Geog. 370 Geography of Asia 3-3
Geographic factors which have played a part in the development of internal and external problems facing Asian nations today.

Geog. 380 Geography of Africa 3-3
The economic, political, historical, and cultural development of the countries of Africa in relation to their physical environment.

Geog. 390 Geomorphology 3-3
A comprehensive study of land forms and their origins.

Geog. 400 Geography of Oceania 3-3
Australia, New Zealand, Indonesia, the Philippines, and the island groups of the Pacific, including Micronesia and Polynesia.

Geog. 410 Cartography 3-3
Elementary drafting techniques for presenting data on maps, charts, block diagrams, allied problems and methods.

Geog. 420 Cultural Geography 3-3
A study of population and its attributes, settlement patterns, race, religion and language and the effect of culture on resource use.

Geog. 430 Geography of Urban Regions 3-3
A review of the theories of the structural-functional character of urban regions and of the theory of central place systems.

Geog. 881, 882 Special Methods in Teaching Geography 2-2, 1-1
Lesson planning, selection of materials, curriculum development, review of relevant research.

Geog. 900 Independent Study in Geography 3-3
Provides exceptional students the opportunity of research with staff guidance in a subject or problem of geographic significance.

HISTORY

Hist. 101 and 102 History of Civilization I and II 3-3
Emphasizes the special characteristics and contributions of periods and peoples from 1500 until today.

Hist. 200 United States History and Constitution 3-3
The major forces in the development of the American heritage from the Revolutionary War to the present.

Hist. 211 United States History I 3-3
Begins with colonial times and terminates with the period of Reconstruction.

Hist. 212 United States History II 3-3
Continuation of History 211. From Reconstruction to the present.

ELECTIVES

Hist. 300 The American Civil War and Reconstruction Period 1850-1865 3-3
Politics, slavery, and Lincoln's rise to power. The political, military and diplomatic aspects of the war. The failure of Reconstruction. Prerequisite: Hist. 211.

Hist. 310 The Westward Movement 3-3
The Frontier studied as a historical, social, economic, and psychological process to determine its impact on American development. Prerequisite: Hist. 211.

Hist. 320 The Economic History of the United States 3-3
Agricultural, financial, commercial, and technological development of the United States from colonial times to the present. Prerequisite: Hist. 211, 212.

Hist. 330 American Diplomatic History 3-3
A survey of the roots of American diplomacy before 1900, with major emphasis on 20th-century problems. Prerequisite: Hist. 211, 212.

Hist. 341 American Intellectual History I 3-3
The history of ideas in America from the 17th century to the present. Prerequisite: Hist. 211, 212.

Hist. 342 American Intellectual History II 3-3
A continuation of Hist. 341.

Hist. 350 History of Mexico, Central America and the Caribbean. 3-3

Hist. 360 History of Eastern South America (Brazil, Argentina, Uruguay, Paraguay) 3-3

Hist. 370 History of Western South America (the Andean countries) 3-3
Each surveys pre-Columbian and colonial backgrounds, the clash and fusion of cultures, and the evolution of today's Latin American civilizations.

Hist. 380 American Colonial History 3-3
Exploration, settlement patterns, imperial system, social structure, rise of representative government in America, and the 18th century wars for empires. Prerequisite: Hist. 211.

Hist. 390 Era of the American Revolution 3-3
Coming of the Revolution, war tactics and strategy, Confederation problems and the American Constitution. Prerequisite: Hist. 211.

Hist. 391 Federalist Era 1789 - 1828 3-3
Early American nationalism with stress on the first American party system, economic nationalism, and foreign policy declarations. Prerequisite: Hist. 211.

Hist. 392 History of the South 3-3
Slavery, the Confederacy, Reconstruction. Development of the Solid South, the Negro, and Civil Rights from a Southern view.

Hist. 393 U.S. Industrial History 3-3
The industrialization and urbanization of the United States economy, 1870 - 1930. Prerequisite: Hist. 211, 212.

Hist. 394 Twentieth Century America 3-3
Liberalism vs. conservatism in politics, economics, social life, and diplomacy from the turn of the century to the present. Prerequisite: Hist: 212.

Hist. 400 Greek and Roman History 3-3
General summary of Greek and Roman civilizations from the arrival of the Hellenes until the end of the Western Empire. The age of the Eastern Emperors.

Hist. 410 The Ancient Near East 3-3
Intensive study of Egyptian, Mesopotamian, Hebrew, Cretan, and Persian civilizations.

Hist. 420 Byzantine History 3-3
The development of the concept of a "Second Rome"; Julian the Apostate; and Moscow as the "Third Rome."

Hist. 430 History of the Middle Ages 3-3
The political-cultural history of the Mediterranean and European world from the fall of the Roman Empire to the Renaissance.

Hist. 440 History of the Renaissance and Reformation 3-3
The causes and nature of the Renaissance and Reformation and their relationship.

Hist. 450 European History to 1815 3-3
From 1500 to 1815, with special emphasis upon the political, social, and economic progress of the major European nations. Prerequisite: Hist. 101.

Hist. 461 European History in the Nineteenth Century 3-3
1815 to 1914. Attention given also to such social and intellectual developments as romanticism, nationalism, Darwinism. Prerequisite: Hist. 101.

Hist. 462 European History in the Twentieth Century 3-3
1914 to the present. Includes a study of the "Cold War." Prerequisite: Hist. 102.

Hist. 463 History of Eastern Europe 3-3
Social and cultural development, Russian and Western European influences, emergence of independent nations after World War I. Prerequisite: Hist. 101, 102.

Hist. 470 Russian History to 1917 3-3
The founding of the Kievan State; the Mongol, Muscovite and Empire periods to the 1917 Revolution. Prerequisite: Hist. 102.

Hist. 480 Russian History—1917 to the Present 3-3
1917 Bolshevik power seizure; attempts to put Marxist theory into practice; institutional development of state, family, education, religion. Prerequisite: Hist. 102.

Hist. 490 The Modern Near East 3-3
The Near East from the ascendancy of the Ottoman Turks to the regimes following World War I. Prerequisite: Hist. 102.

Hist. 500 British History 55 B.C. - 1603 A.D. 3-3
The Picts and Celts; the Roman conquest and withdrawal; the Angles, Saxons, Danes and Normans; the Angevin and Tudor periods.

Hist. 510 British History - 1603 to the Present 3-3
Stuarts, Cromwell, Restoration; colonial period; industrial, agriculture, transportation revolution; Napoleonic era; Victorian age; world empire. World Wars I and II. Prerequisite: Hist. 102.

Hist. 511 England Under the Tudors, 1485 - 1603 3-3
Establishment of the Tudors; Reformation; England of Elizabeth; Parliament and rise of Puritanism; Spain; the Armada. Prerequisite: Hist. 101.

Hist. 520 History of Imperialism 3-3
Relations between Europe and the non-European world through the periods of expansion, Western dominance, and nationalist uprising against colonialism. Prerequisite: Hist. 102.

Hist. 530 Early Intellectual History 3-3
The development of historical investigation and the problem of historical methods as exemplified in ancient and medieval texts and writers.

Hist. 540 Modern Intellectual History 3-3
Critical appraisal of the major contemporary historical traditions. Prerequisite: Hist. 102.

Hist. 550 Modern Economic History 3-3
Economic development in the Western World from the Industrial Revolution to the present. Emphasizes systems. Prerequisite: Hist. 102.

Hist. 560 Current World Affairs 3-3
An understanding of present world problems and international relations through an analysis of contemporary forces and issues. Prerequisite: Hist. 102.

Hist. 881, 882 Special Methods in Teaching of History 2-2, 1-1
Special techniques for the teaching of history, and their relationship to the principles of general methods.

Hist. 900 Independent Study in History 3 credits

Open to students specializing in History. Each student researches and writes a scholarly report under tutorial guidance.

INDUSTRIAL ARTS

I.A. 100 General Shop I 2-4

Methods and procedures of conducting teaching units in a multiple-activity shop. Units normally carried on in teacher-training assignments.

I.A. 110 Introduction to Wood 2-4

The making of household accessories. A study of tools, materials, mechanics, processes and design.

I.A. 120 Introduction to Metals 2-4

Chemical metallurgy of selected metals, the use of precision measuring tools, sheetmetal fabrication, foundry practices, bench processes.

I.A. 130 Introduction to Typography 2-4

Comparison of printing methods in visual communication. Latin alphabet, typography, design-layout, terminology, point system, inks, plates, presses, papermaking, proofmarks.

I.A. 140 DC Circuit Fundamentals 2-4

Principles of DC electricity experimentally applied to circuits, devices and wiring problems.

I.A. 150 History of Power Mechanics 2-4

Man's endeavor to harness the forces of nature to meet his ever-increasing demand for power. Students construct a model in prime movers.

I.A. 160 Introduction to Drawing 2-4

Lettering, dimensioning, orthographic projection, symbols, sectioning, isometric and auxiliary views. Problem development and blueprint reading.

I.A. 170 Introduction to Design 2-4

Through a series of compositional assignments students are introduced to two-dimensional and finally three-dimensional form.

I.A. 200 General Shop II 3-6

Laboratory experiences with common theories and practices of the general shop.

I.A. 210 Furniture Making 3-6

Individual pieces of small furniture are designed, constructed and finished. Advanced concepts and techniques are taught.

I.A. 220 Machine Shop Processes 3-6

Metalworking machine tools and processes, as well as arc welding. Design and fabrication of products which involve skill in machining and welding.

I.A. 230 Graphic Arts Unit Teaching 3-6

Investigation of a significant graphic arts product. Problem-centered group activity leading to unit booklet involving photography, visual aids, bookbinding, printmaking.

I.A. 240 AC Circuit Fundamentals 3-6

Principles of AC electricity and electromagnetism and their applications in circuitry, motors, transformers and other devices.

I.A. 250 Internal Combustion Engines 3-6

Emphasis on the break-down, study, reassembling, testing, and adjusting of single-cylinder to eight-cylinder engines.

I.A. 260 Engineering Drawing 3-6

Continuation of fundamentals in the field of intersection and developments, revolutions, axonometrics, assembly, and detail drawing.

I.A. 300 Structures 3-6

Basic principles and assumptions of structural design, including drawing and models. Load tests determining reactions, shears, bending moments, stresses.

I.A. 310 Production Furniture 3-6

Production of a piece of furniture employing jigs, fixtures and suitable mass-production procedures. Appropriate methods of production management.

I.A. 320 Advanced Machine Shop Processes 3-6

Emphasizes increasing skill in selected areas of metalworking and broadening knowledge of machine operation. Oxy-acetylene welding of ferrous metals.

I.A. 330 Offset-Lithography 3-6

Problems of design, pasteups, repros, camera, stripping, platemaking, press operation. History, color, halftones, stock selection, chemistry of ink on paper.

I.A. 340 Radio Theory and Practice 3-6

Basic electronic principles and their applications in radio circuitry. Constructional and testing problems.

I.A. 350 An Introduction to Flight 3-6

History and physics of flight, supersonic flight, rocket-propulsion and course development for high-school level.

I.A. 360 Descriptive Geometry 3-6

Abstract and practical problems are worked out graphically. The concept of locus.

I.A. 370 Advanced Design 3-6

Students develop individual design projects and follow through to a completed design module. Prerequisite: I.A. 170 or equivalent course.

I.A. 400 Research in Industrial Materials 3-6
Standard tests and procedures and laboratory tests to determine the properties of materials.

I.A. 410 Woodworking Technology 3-6
Tool and machine shop maintenance, designing and making teaching aids, and experimentation in wood technology and project development. For skilled woodworkers.

I.A. 420 Elements of Metallurgy 3-6
The physical metallurgy of common metals, involving heat treatment, crystallization, slip, workhardening, corrosion and microscopic inspection of selected specimens.

I.A. 430 Problems of Service Printing 3-6
Supporting role of graphic arts. Job scheduling, planning, ordering stock, estimating. Heidelberg and Davidson operation. Textbooks, curriculum problems, shop layout.

I.A. 440 Transistors, FM, Test Equipment 3-6
FM receivers, transistor circuitry, power supplies, test equipment and various electronic devices. Constructional and experimental experiences.

I.A. 450 Power Mechanics Projects Development 3-6
To research, design, finance and construct a project that has been approved by the instructor.

I.A. 470 Ceramics 3-6
Includes throwing on the wheel. Glazing techniques. A strong emphasis on three-dimensional sculptural form.

I.A. 700 Foundations of Industrial Arts I 2-2
Educational theories, social and academic setting, and leaders of each period of Industrial Arts history from manual training to the present.

I.A. 710 Foundations of Industrial Arts II 3-4
Curriculum theories and their application to the structure and organization of Industrial Arts in general education.

I.A. 800 Principles and Practices in Industrial Arts 3-3
Principles underlying methods of planning and guiding learning activities in Industrial Arts teaching.

I.A. 850 Student Teaching in Industrial Arts 9-18
Each student is responsible for teaching classes either in the campus junior high school or public school shops under supervision.

I.A. 870 Seminar in Industrial Arts 2-2
Principles and practices of shop administration, including shop planning, finances, equipment, storage maintenance, law.

I.A. 880 Industrial Arts for Special Education 3-6
Rudiments of planning, drawing, and construction for teaching aids and projects. Knowledge of tools, materials and processes.

I.A. 890 Instructional Material in Elementary Education 2-4
Effective selection, use and evaluation of various types of instructional media.

I.A. 900 Independent Study in Various Shops 3 hours credit

MATHEMATICS

Math. 101 and 102 College Mathematics I, II 3-3
The topics in this two-semester course are selected from algebra, trigonometry, analytic geometry and calculus. Math. 101 is a prerequisite for Math. 102.

Math. 110 Algebra 3-3
The structure of Algebra is emphasized. Topics include real numbers, fields, linear equations and inequalities, quadratic polynomials and complex numbers.

Math. 120 Elementary Functions 3-3
General properties of functions are applied to the study of polynomial, circular, and exponential functions and their applications. Prerequisite: Math. 110 or permission of the instructor.

Math. 200 Informal Geometry 3-3
Congruence, measurement, parallelism, similarity, mathematical models for space, non-metric geometry, incidence geometry, convexity, distance and the ruler postulate. Prerequisite: Math. 103 or permission of the instructor.

Math. 210 Analytic Geometry 3-3
Cartesian and Polar Coordinates Systems, Conics. Introduction to vectors, vector spaces and transformation of coordinates, matrices and determinants. Prerequisite: Math. 120.

Math. 230 Calculus I 3-3
Differential calculus including necessary elements of analytic geometry with emphasis on a rigorous approach to the derivative. Prerequisite: Math. 120 or permission of the instructor.

Math. 240 Calculus II 3-3
Integral calculus including techniques and applications of integration of algebraic and non-algebraic functions. Prerequisite: Math.. 230.

Math. 250 Introduction to Abstract Algebra 3-3
The basic concepts of algebra such as groups, normal subgroups, rings, ideals, fields, and homomorphism. Prerequisite: Math. 120 or 102.

Math. 260 Linear Algebra 3-3
Vector space properties are applied to the study of systems of linear equations, linear transformations, matrix algebra, and analytic geometry. Prerequisite: Math. 250.

Math. 300 Calculas III 3-3

A continuation of Math. 240 including the study of conic sections by polar coordinates, and topics selected from hyperbolic functions. Prerequisite: Math. 240.

Math. 310 Calculus IV 3-3

Curves and functions of several variables. The theory of curves, partial derivatives, the chain rule and applications. Prerequisite: Math. 300.

Math. 340 Geometry I 3-3

Elementary geometry is studied from a point set viewpoint. The foundations of Euclidean and non-Euclidean geometry are emphasized. Prerequisite: Math. 260.

Math. 350 Probability and Statistics I 3-3

Counting methods, independence of events, conditional probability introduce basic concepts of probability. Emphasis on discrete random variables and probability distributions. Prerequisite: Math. 102 or 120.

Math. 400 Number Theory 3-3

Divisibility, congruence, and other properties of integers from an historical as well as a modern approach. Prerequisite: Math. 102 or permission of the instructor.

Math. 410 Elementary Differential Equations

Ordinary differential equations of the first order and degree including linear equations. Linear equations of the second order. Prerequisite: Math. 310 or the equivalent.

Math. 420 History of Mathematics 3-3

The development of mathematical ideas and methods from ancient to modern times, and their relevance for other fields of knowledge. Prerequisite: Math. 102 or equivalent.

Math. 430 Introduction to Mathematical Logic 3-3

Proof and truth in formal systems. Sentential logic and quantification. Topics from set theory, proof theory, model theory, recursive function theory. Prerequisite: Math. 102 or the equivalent.

Math. 450 Topology 3-3

Point sets, metric spaces, topological spaces, connectedness, compactness, networks and maps, transformations, and selected problems. Prerequisite: Math. 310.

Math. 460 Geometry II 3-3

Synthetic methods are used to introduce the fundamentals of projective geometry. Analytic methods are used to develop this study. Prerequisite: Math. 340.

Math. 470 Probability and Statistics II 3-3

From discrete to continuous random variables. The binomial, poisson, and normal distributions, estimation of hypothesis and sampling theory. Prerequisite: Math. 240 and Math. 350.

Math. 881 The Secondary School Mathematics Curriculum I 2-2
The methodology, objectives and content of a modern mathematics sequence for grades 7-12. Prerequisite: Permission of the instructor.

Math. 882 The Secondary School Mathematics Curriculum II 1-1
Continuation of Math. 881.

Math. 883 Mathematical Concepts 3-3
Topics from arithmetic, algebra, and geometry of modern elementary school mathematics programs with attention to the structural and discovery approach. Prerequisite: Math. 101.

Math. 900 Independent Study 3 hours credit
In-depth study in areas of mathematics. Prerequisite: Permission of Department.

MEDICAL TECHNOLOGY

Courses at affiliated hospitals:

M.T. 800 Hematology, Serology and Blood Bank 8-19
Evaluating and enumerating blood cells; evaluating immunological reactions of serum; determination of human blood-group factors and reactions.

M.T. 810 Bacteriology and Parasitology 8-13
The pathogenic bacteria and fungi, with emphasis on methods of identification.

M.T. 820 Histology and Cytology 4-7
Individual instruction in the preparation and staining of tissues and body fluids for microscopic study.

M.T. 830 Biochemistry 8-13
The chemical composition of body fluids and the significance of its variation in disease.

M.T. 840 Laboratory Analysis 4-8
Supervised practice in the clinical laboratory.

MUSIC

Mus. 110 Art of Music I 3-3
Music as aesthetic experience. Representative styles and categories from the Middle Ages to the present.

Mus. 210 Applied Music 1-2
Techniques and skills for prospective teachers of elementary and special classes. Students who can pass an equivalency examination exempted.

Mus. 300 Art of Music II 3-3
Music's reflection of the values and ideals of societies past and present. Interrelationships between the fine arts.

Mus. 310 Symphony 3-3
Structural and stylistic characteristics of the symphony from the 18th century to the present.

Mus. 320 Opera 3-3
Several works from the standard operatic repertoire. Some significant trends in modern opera.

Mus. 330 Chamber Music 3-3
The vast area of music for smaller combinations of instruments; literature for the string quartet.

Mus. 340 Twentieth-Century Music 3-3
The idioms and aesthetic notions of the present century, together with their relationships to the past.

Mus. 400 Choral Arts 1-2
Singing choral music past and present, including dramatic music. No more than 3 semester hours applicable toward graduation. Available for audit. (See Mus. 410).

Mus. 410 Instrumental Arts 1-2
Small and large ensemble playing of representative works for instruments. No more than 3 semester hours of Mus. 410 or any combination of Mus. 410 and Mus. 400 applicable toward graduation. Available for audit.

Mus. 420 Class Piano 1-2
Practical keyboard usages in classroom work; accompaniment, simple transposition, harmonization of melodies at the keyboard.

Mus. 430 Class Voice 1-2
Principles of voice production. Breath control, phrasing, resonance, diction.

Mus. 440 Song 3-3
Popular, folk, and art songs of many nations; application of such music to the elementary classroom.

Mus. 450 Harmony 3-3
Harmonizations of simple melodies. Principles of modulation and key relationships.

Mus. 800 Music in Elementary Education 2-4
The obectives and techniques of teaching music in the first six grades. Prerequisite: Mus. 110 and Mus. 210.

Mus. 810 Music in Special Education 2-4
Objectives and techniques of teaching music in special classes. Prerequisite: Mus. 110 and Mus. 210.

Mus. 820 Workshop in Elementary Music Education 2-4
Modern approaches to professional music education in the elementary school. Primarily for elementary music teaching specialists.

Mus. 900 Independent Study in Music 3 credits
For students of exceptional ability and interest.

NURSING

Nursing 701 Introduction to Nursing I 1-1
The historical development of nursing as a concept and occupation.

Nursing 702 Introduction to Nursing II 1-1
The various approaches to the developing concept of nursing.

Nursing 711 Foundations of Nursing I 4-7
To develop and implement the broad concepts of patient care. Basic nursing skills, applicable to all nursing situations.

Nursing 712 Foundations of Nursing II 4-7
A continuation of Foundations of Nursing I, which is a prerequisite. Planned clinical experience.

Nursing 720 Nutrition 3-3
Basic elements of nutrition. Budgeting, food purchasing, menu planning, selection, preparation and serving of basic foods.

Nursing 731 Foundations of Professional Relationships I 1-1
The student is assisted to become more aware of the factors influencing relationships within the student group and with patients.

Nursing 732 Foundations of Professional Relationships II 1-1
The student is assisted to develop skills in relation to group and individual situations through use of self-understanding.

Nursing 800 Medical-Surgical Nursing 12-24
Identification of nursing needs of families during childbearing and child rearing years derived from normal physiological and psychosocial development. Prerequisite: Psych. 220.

Nursing 810 Maternal and Child Health Nursing 12-24
Role of the family in the community. Importance of principles to protect and preserve the health of parent and child.

Nursing 820 Advanced Medical-Surgical Nursing 9-20
Nursing problems of adult and his family. Management principles in meeting nursing needs of a group of patients.

Nursing 830 Community and Mental Health Nursing 12-24
Health Needs — physical, emotional, social — of families from an epidemiological approach. Public Health Science and Dynamic-Psychiatry principles.

Nursing 870 Introduction to Pharmacology 2-2
Origin, preparation, action, therapeutic use and toxic effects of commonly used drugs.

Nursing 880 Principles of Management 2-2
Elements and principles applicable to the practice of nursing and to beginning leadership positions in nursing.

Nursing 890 Nursing Seminar 2-2
Current trends and problems. The nurse as both an individual and a group and organization participant.

PHILOSOPHY

Phil. 100 Introduction to Philosophy 3-3

The broad problems of truth, reality, goodness and beauty. Contributions of major schools of philosophy.

Phil. 300 Logic 3-3

Theoretical and practical aspects of logic. From Aristotelian to symbolic logic.

Phil. 310 The Philosophy of Plato 3-3

Plato's theory of ideas, theory of knowledge, ethical and political views, doctrine of fine arts.

Phil. 320 The Philosophy of Aristotle 3-3

A study of Aristotle's philosophy as seen in his "Metaphysics," "Politics" and "Nicomachean Ethics."

Phil. 330 The Philosophy of Communism 3-3

Its origins, philosophy, and development as found in the writings of Karl Marx and as it is applied today.

Phil. 340 Ethics 3-3

The representative types of ethical systems and problems from Plato to Paul Tillich.

Phil. 350 Epistemology 3-3

The problem and method of human knowledge. Theories presented in the light of Idealism, Realism, Pragmatism, and Existentialism.

Phil. 360 Metaphysics 3-3

Introduction to the origin and development of metaphysical problems in Western philosophy.

Phil. 370 History of Medieval Philosophy 3-3

Includes St. Augustine, Boethius, Albertus Magnus, Avicenna, Averroes, Maimonides and St. Thomas, and their influence upon subsequent philosophy.

Phil. 380 History of Modern Philosophy 3-3

Trends of modern thought since the Renaissance, including Descartes, Locke, Spinoza, Leibniz, Hume, Kant, and Hegel.

Phil. 390 Contemporary Philosophy 3-3

An analytic and historical study of contemporary thought from Nietzsche to Whitehead.

Phil. 400 Existentialism 3-3

The origin of contemporary existentialism; its leading ideas as seen in the writings of Kierkegaard, Heidegger, Jaspers, and Sartre.

Phil. 411 American Philosophy I 3-3

From the Colonial Period through the 18th Century. Edwards through Emerson.

Phil. 412 American Philosophy II 3-3

From 1800 through today. Ralph Barton Perry through Whitehead.

Phil. 420 Political and Social Philosophy 3-3

The various political and social ideas beginning with Plato and continuing to Marx.

Phil. 800 Educational Philosophy 3-3

A guide to the philosophical treatment of educational problems. Employs the synoptic, critical and systematic areas of philosophy.

PHYSICAL EDUCATION

General Education requirement:

P.E. 100 Health and Fitness 3-3

Body structure, physical fitness, motor learning, motor performance in terms of their relationship to man's physical well-being.

ELECTIVES

P.E. 200 - 400 Activity courses 2-1

Activities are taught on a half - semester basis. Each half semester carries 2 clock hours and 1/2 credit.

P.E. 200	Handball	P.E. 214	Tennis
P.E. 201	Physical Conditioning	P.E. 215	Advanced Tennis
P.E. 202	Weight Training	P.E. 216	Archery
P.E. 203	Wrestling	P.E. 217	Badminton
P.E. 204	Squash	P.E. 218	Fencing
P.E. 205	Soccer	P.E. 219	Golf
P.E. 206	Lacrosse	P.E. 220	Judo and Self Defense
P.E. 207	Games	P.E. 221	Bowling
P.E. 208	Basketball	P.E. 222	Track and Field
P.E. 209	Advanced Basketball	P.E. 223	Gymnastics
P.E. 210	Volleyball	P.E. 224	Advanced Gymnastics
P.E. 211	Softball	P.E. 225	Slimnastics
P.E. 212	Swimming	P.E. 226	Rhythmics
P.E. 213	Advanced Swimming	P.E. 227	Field Hockey
		P.E. 228	Advanced Field Hockey

P.E. 080 First Aid 0-2

The official Red Cross Standard course is required for students in all curricula except Nursing, Medical Technology and all Bachelor of Arts programs.

P.E. 800 Physical Education in the Elementary School 1-2

Theory and practice course designed to guide the classroom teacher in organizing a comprehensive program of physical education activities.

P.E. 801 Physical Education for Secondary Schools 3-3

Pertinent background material for organizing and conducting an integrated activity program for junior and senior high school boys.

P.E. 802 Fundamentals of Coaching 3-3

For the prospective teacher-coach. An analysis of the principles and practices of coaching in various sports.

PHYSICS

Phys. 100 General Physics 3-4

No previous experience in physics is assumed, but a knowledge of algebra and trigonometry is. Required for all Industrial Arts students, exclusive of Class of 1973 and thereafter.

Phys. 211 Introductory Physics I 3-4

The problem of motion, development of Newtonian mechanics, wave motion, light, electromagnetic theory.

Phys. 212 Introductory Physics II 3-4

Continuation of Phys. 211. Relativity, quantum theory, wave theory, nuclear and atomic physics. Prerequisite: Phys. 211.

Phys. 301 General Physics I 4-5

A study of Newtonian, or classical, physics.

Phys. 302 General Physics II 4-5

Continuation of Phys. 301. Electrostatics, electromagnetism, circuit theory, wave motion, physical and geometric optics. Prerequisite: Physics 301.

Phys. 310 Modern Physics 3-3

An extension of the introductory physics course into the realm of atomic physics. Prerequisites: 301 and 302.

Phys. 320 Electronic Physics I 4-5

Foundations of electromagnetic theory, including electrostatics, electromagnetism, and alternating currents. Prerequisites: Phys. 301 and Phys. 302.

Phys. 330 Electronic Physics II 4-5

Basic electronic phenomena, covering topics in elementary circuit theory, tube characteristics and tube circuits, transistors and transistor circuits. Prerequisite: Phys. 320.

Phys. 340 PSSC Physics 3-4

For prospective Secondary physics teachers. Concepts, demonstrations, and experiments on the Physical Science Study Committee (Secondary physics course). Prerequisite: Phys. 301 and Phys. 302.

Phys. 351 and 352 Mathematical Physics 3-3

A traditional approach to optics and wave phenomena. Prerequisites: Phys. 400, Math. 410 or instructor's permission.

Phys. 360 Optics 4-5

An introduction to wave theory, geometrical and physical optics, including diffraction, lens theory, interference, and quantum theory. Prerequisites: Phys. 301 and 302.

Phys. 380 Solid State 3-3

The structure, properties and behavior of solids, as well as physics and chemistry. Prerequisite: Phys. 100, General Chemistry.

Phys. 400 Intermediate Mechanics 3-3

A survey of classical mechanics, statistical mechanics and quantum mechanics. A knowledge of general physics and calculus is assumed.

Phys. 430 Advanced Laboratory 3-5

The experiments will be from different areas of physics.

Phys. 881, 882 Physics Methods 2-2, 1-1

Primarily for the practicing physics teacher.

Phys. 900 Independent Study 3-3

Laboratory research under guidance of physics staff. Prerequisite: Permission of instructor.

SCIENCE

Sc. 201 and 202 Physical Science I and II 3-4

For the non-scientist. Emphasis is upon the building of conceptual models, solving techniques, and the processes of science.

Sc. 310 Astronomy 3-4

A study of planetary motion, the sun, stars, and galaxies. An observing program. A background of algebra is assumed.

Sc. 320 Earth, Sea and Air 3-4

Selected topics from the earth sciences.

Sc. 810 Science in Elementary Education 3-4

Content, methods and resources suggested by curriculum groups are examined and experiences developed that exemplify current thinking in science education.

SOCIAL SCIENCES

(Also see History and Geography)

S.S. 220 Introductory Economics 3-3

The organization and functions of economic society and the interrelated process of production, distribution and consumption. Current problems are emphasized.

S.S. 300 Comparative Government 3-3

Governmental philosophies and their differing political climates. The American system receives special emphasis.

S.S. 310 Introduction to Political Science 3-3

A comparative analysis of democratic and totalitarian political systems: the United States, Britain, France, Germany, and Russia.

S.S. 320 Introductory Anthropology 3-3

Types, range and diversity in human cultures and cultural institutions, past and present; cultural evolution; relationship of culture and personality.

S.S. 350 Classical and Medieval Political Philosophy 3-3

The writings of the great figures in the development of classical and medieval political thought.

S.S. 360 The American Political System 3-3
Special emphasis on the unique American economic, historical, ideological, and social context.

S.S. 370 Modern Political Philosophy 3-3
An analysis of the development of political thought from the Renaissance to the present-day behavioral movement.

S.S. 400 International Relations 3-3
A survey of the relations between states from World War II to the present.

SPECIAL EDUCATION

Sp. Ed. 200 Nature and Needs of the Mentally Retarded 3-3
Characteristics of both educable and trainable children, methods of classification, and causes of mental retardation. Responsibility of community and school.

Sp. Ed. 210 Home Arts 3-6
Food, clothing and other home-arts areas for those who will teach and work with the mentally retarded.

Sp. Ed. 240 Exceptional Children 4-4
Etiology, classification, problems of children who have physical disability, mental retardation, emotional or social difficulties, giftedness. Clinical observations and consultations.

Sp. Ed. 600 Learning Disabilities 3-3
Theories, diagnostic strategies and teaching methods. Emphasis on evaluation and remediation of learning disabilities.

Sp. Ed. 610 Secondary Education Programs for the Educable Mentally Retarded. 3-3
Lectures, discussions, observations and readings for an understanding of how the secondary school can serve the mentally retarded.

Sp. Ed. 620 Nature and Needs of the Emotionally Disturbed 3-3
Causes and influences of emotional disturbances. Emphasis on diagnosis and implications for educational planning.

Sp. Ed. 630 Curriculum for the Trainable Child 3-3
Emphasis on content appropriate to the areas of language arts, quantitative thinking, social and civic responsibility.

Sp. Ed. 640 Problems in Language Arts for Mentally Retarded 3-3
Students identify, develop, use resources related to classroom problems in language areas. Stages of development and deviations of exceptional child.

Sp. Ed. 650 Seminar in Mental Retardation 3-3
Approaches to educational research and study of significant problems in language areas. Stages of development and deviations of their research problem.

Sp. Ed. 660 Industrial Skills and Analysis of Job Areas 3-3
A laboratory course providing technical knowledge and instruction of industrial skills appropriate for the mentally retarded.

Sp. Ed. 670 Methods and Curriculum for Teaching the Emotionally Disturbed 3-3

Organization, planning, materials and curricula for teaching the emotionally disturbed at various levels.

Sp. Ed. 800 Methods of Teaching the Mentally Retarded 3-3

Organization and planning of activities and materials for different maturational levels. Current research related to the application of learning patterns.

Sp. Ed. 820 Curriculum for the Mentally Retarded 3-3

Appropriate structures. Emphasizes development of learning, language arts, quantitive thinking, social and civic responsibilities, pre-vocational experiences.

Sp. Ed. 830 Reading in Special Education 3-3

Children's reading difficulties, preventive and remedial techniques, current reading materials, diagnostic tests. Emphasis on Speech-Education curriculum adjustment.

Sp. Ed. 850 Student Teaching 12-25

Senior students have eighteen weeks of complete classroom responsibility, guided by cooperating teacher, college supervisor, professional personnel from other disciplines.

Sp. Ed. 900 Independent Study 3-3

To review, develop and synthesize a problem in Special Education. Opportunities for consulting and visiting agencies for exceptional children.

SPEECH

Sp. 010 Speech Improvement 1-0

Remedial course. Students are assigned after diagnosis, and recommendations of need for speech improvement. Individual and group therapy.

Sp. 100 Speech 2-2

Effective organization and delivery of speeches, oral interpretation of literature, techniques of intelligent criticism. Forums, panel discussions, parliamentary procedure.

Sp. 200 Fundamentals of Theater Production 2-1

A laboratory in theater primarily concerned with play production. Acting, directing, stagecraft.

Sp. 300 Argumentation and Debate 3-3

The argumentive process in a democracy. Debate, reasoning, research.

Sp. 310 Intercollegiate Debate 1 credit per semester

Two such credits may satisfy speech requirement; may repeat for credit; may be pursued as non-credit extracurricular activity.

Sp. 320 Persuasion 2-3

Theory and Practice. Analysis of historical and contemporary speeches. Prerequisite: Sp. 100.

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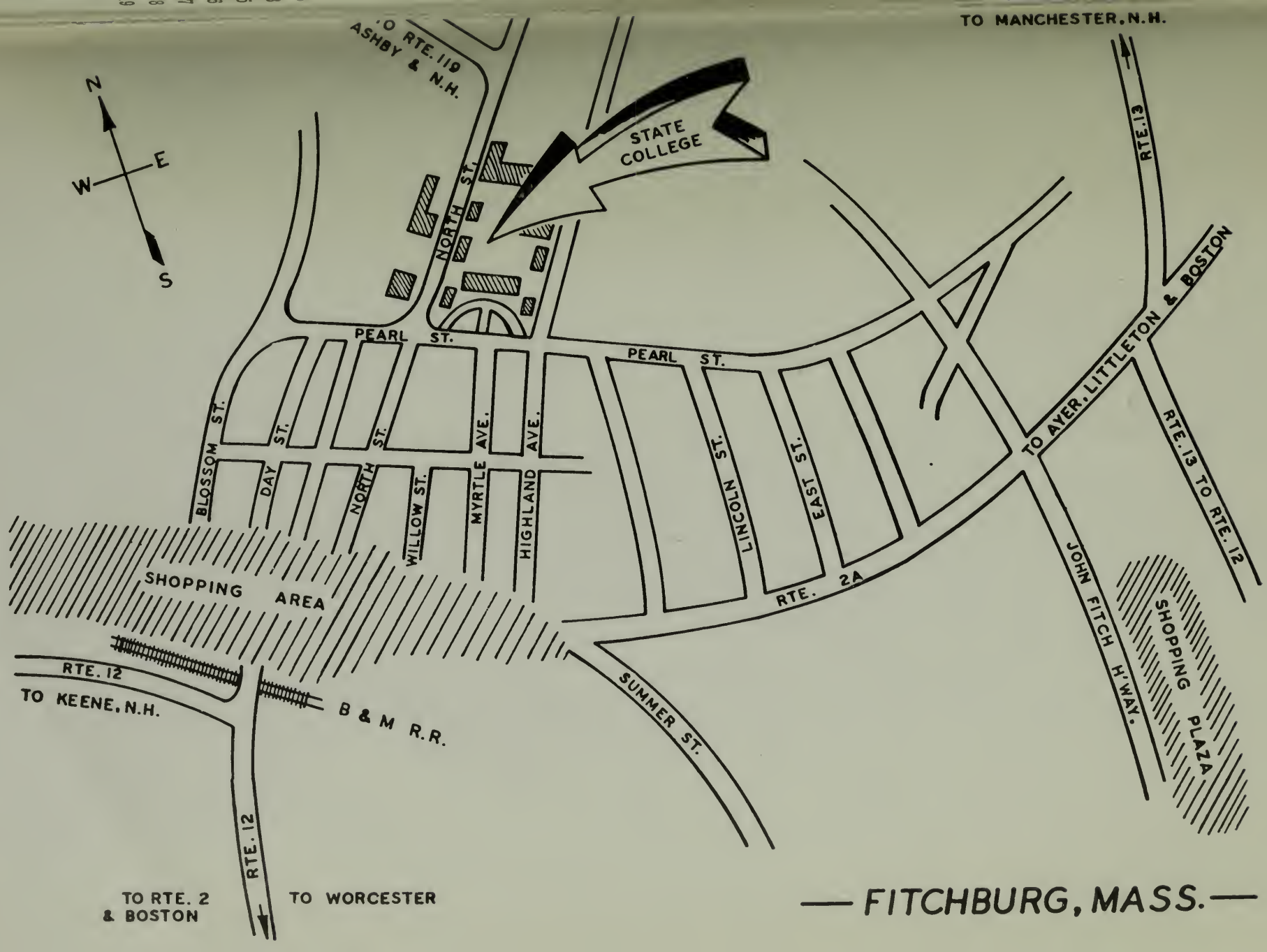
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PEARL ST.
RTE. 13
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RTE. 13 TO RTE. 12
BLOSSOM ST.
DAY ST.
NORTH ST.
WILLOW ST.
MYRTLE AVE.
HIGHLAND AVE.
LINCOLN ST.
EAST ST.
SHOPPING AREA
RTE. 2A
JOHN FITCH H'WAY.
SHOPPING PLAZA
RTE. 12
TO KEENE, N.H.
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